SONY

PROFESSIONAL DISC CAMCORDER

PDW-700

HD/SD SDI INPUT BOARD
CBK-HD01

ANALOG COMPOSITE INPUT BOARD
CBK-SC02

MPEG HD422 Power HAD FX

Professional Disc DL

MEMORY STICK ™

MAINTENANCE MANUAL
Volume 1 1st Edition (Revised 2)
Serial No. 10001 and Higher

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠ WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

注意

指定以外の電池に交換すると，破裂する危険があります。
使用済の電池は，説明書に従って処理してください。

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.

Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL

Lithiumbatteri - Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjähtää jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

This Professional Disc Camcorder is classified as a CLASS 1 LASER PRODUCT.

Laser Diode Properties

Wavelength: 400 to 410 nm
Emission duration: Continuous
Laser output power: 135 mW (max. of pulse peak), 65 mW (max. of CW)
Standard: IEC60825-1 (2001)

GEFAHR

Bei geöffnetem Laufwerk und beschädigter oder deaktivierter Verriegelung tritt ein unsichtbarer Laserstrahl aus. Direkter Kontakt mit dem Laserstrahl ist unbedingt zu vermeiden.

For U.S.A.
CAUTION
Laser radiation when open and interlock defeated.
DO NOT STARE INTO BEAM.
For EUROPE
CAUTION
CLASS 2 LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED.
DO NOT STARE INTO THE BEAM.
ATTENTION
RADIATIONS LASER DE CLASSE 2 EN CAS D'OUVERTURE ET DE DESACTIVATION DES VERROUS.
NE PAS REGARDER LE FAISCEAU.
VORSICHT
KLASSE 2-LASERSTRAHLUNG WENN GEÖFFNET UND SPERREN AUSSER FUNKTION.
NICHT IN DEN STRAHL SEHEN.
ADVARSEL
LASERSTRÅLING AF KLASSE 2 VED ÅBNING OG OMGÅELSE AF LÅSEANORDNINGER.
STIR IKKE IND I LYSSTRÅLEN.
ADVARSEL
LASERSTRÅLING I KLASSE 2 NÅR DEKSELET ER ÅPENT OG LÅSENE UTE AV FUNKSJON.
IKKE STIRR INN I STRÅLEN.
VARNING
KLASS 2:LASERSTRÅLNING NÄR DENNA DEL ÄR OPPNAD OCH SPÄRRMEKANISMER ÄR FRIGJORDA.
TITTA INTE IN I LASERSTRÅLEN.
VARO!
LUOKAN 2 LASERSÄTEILYÄ AVATTUNA JA SISÄISET LUKITUKSET POISTETTUINA.
ÄLÄ KATSO SÄTEESEEN.
適合中国
注意
打开时及联锁失效时有激光辐射
勿直视光束

This label is located insidethe outside panel of the unit.

CAUTION

The use of optical instruments with this product will increase eye hazard.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

X-RAY RADIATION WARNING

Be sure that parts replacement in the high voltage block and adjustments made to the high voltage circuits are carried out precisely in accordance with the procedures given in this manual.

安全のために，周辺機器を接続する際は，過大電圧を持つ可能性があるコネクタを以下のポートに接続しないでください。
：ネットワークコネクター
上記のポートについては本書の指示に従ってください。

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to the following port(s).
: Network connector
Follow the instructions for the above port(s).

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Manual Structure

Purpose of this manual

There are volume 1 and volume 2 in the Maintenance manual of PDW-700.
The maintenance manuals (volume 1, 2) are intended for use by trained system and service engineers, and provides the information of maintenance and detailed service.

Related manuals

The following manuals are available in this model.
If this manual is required, please contact your local Sony Sales Office/Service Center.

- **Operation Manual (Supplied with the unit)**
  This manual is necessary for application and operation (and installation) of this unit.

- **Maintenance Manual**
  Volume 1: Describes about maintenance information, parts replacement, and guideline for adjustment.
  Part number: 9-968-417-03
  Volume 2: Describes about block diagrams, schematic diagrams, board layouts and detailed parts list required for parts-level service.
  Part number: 9-968-435-03

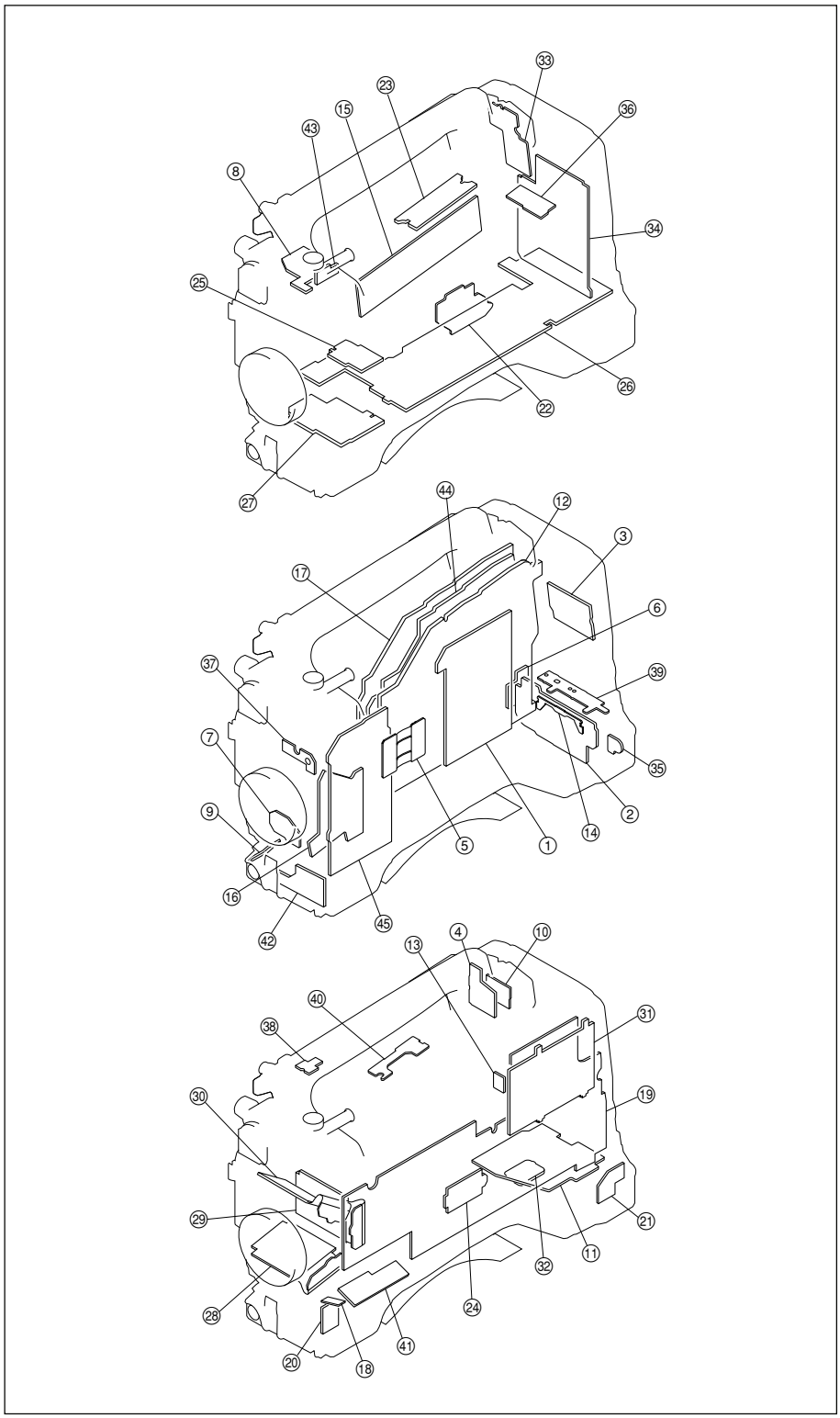
- **“Semiconductor Pin Assignments” CD-ROM**
  This “Semiconductor Pin Assignments” CD-ROM allows you to search for semiconductors used in Broadcast and Professional equipment.
  This manual contains a complete list of semiconductors and their ID Nos., and thus should be used together with the CD-ROM.
  Part number: 9-968-546-06

Section 1
Service Overview

1-1. Locations of Main Parts

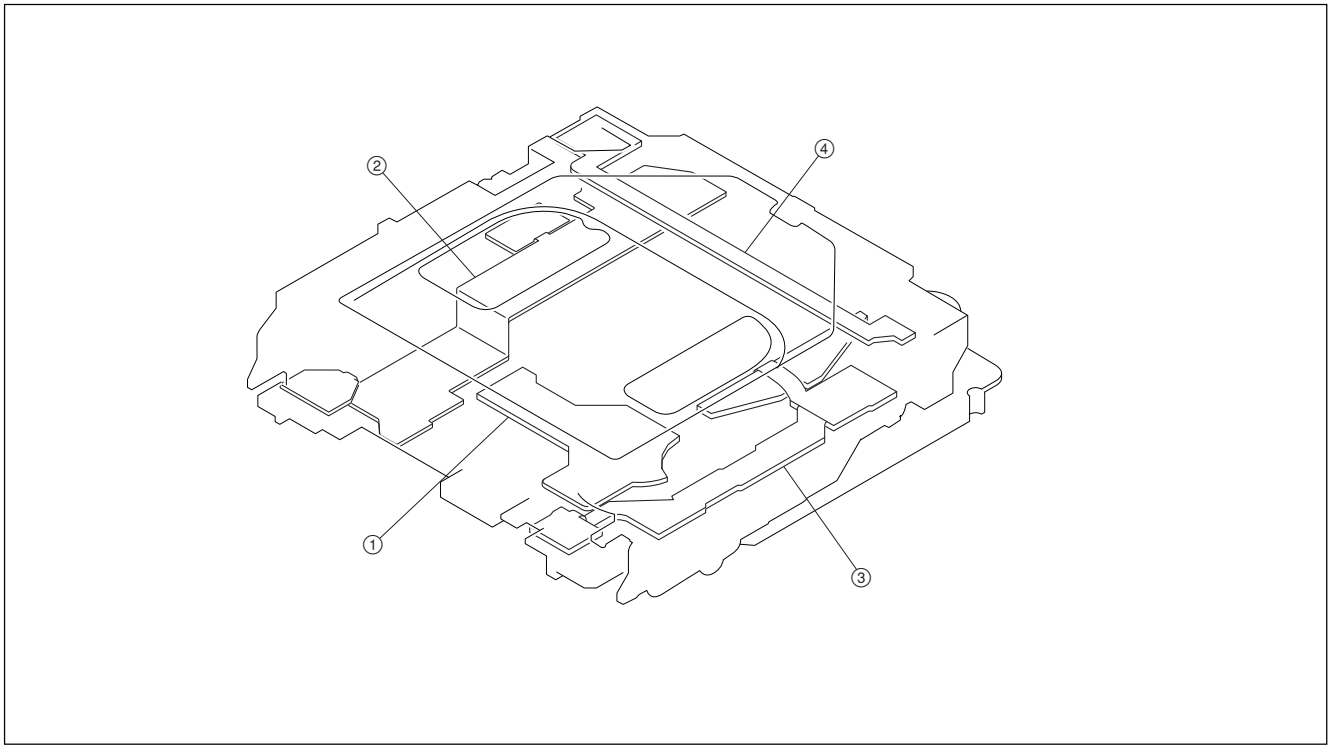
1-1-1. Locations of the Printed Wiring Boards

Main unit



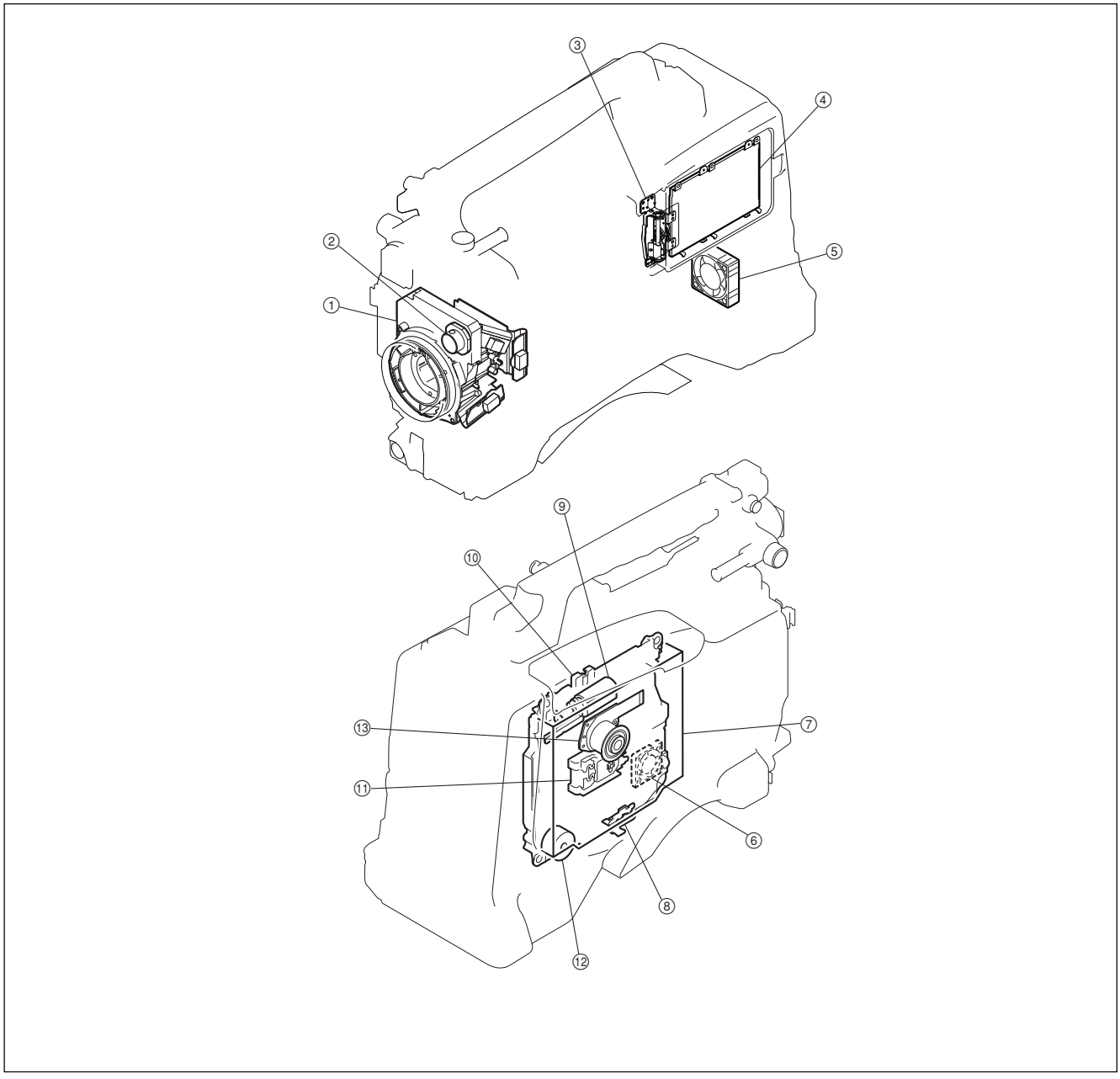
① AT-177
② AXM-38
③ CI-37
④ CN-2946
⑤ CN-2947
⑥ CN-2948
⑦ CN-3001
⑧ CN-3005
⑨ CN-3025
⑩ CN-3026
⑪ CNB-25
⑫ DCP-44
⑬ DET-45
⑭ DET-47
⑮ DR-606
⑯ DR-617
⑰ DVP-45
⑱ ENC-118
⑲ FP-157
⑳ HP-148
㉑ HP-149
㉒ IO-235
㉓ KY-623
㉔ LED-444
㉕ MA-162
㉖ MB-1111
㉗ MS-86
㉘ PA-342/342A
㉙ PA-343/343A
㉚ PA-344
㉛ PD-118
㉜ PS-708
㉝ PS-731
㉞ RE-246
㉟ RM-216
㊱ RX-101
㊲ SE-924
㊳ SW-1249
㊴ SW-1352
㊵ SW-1385
㊶ SW-1391
㊷ SW-1425
㊸ SW-1426
㊹ SY-355
㊺ TG-260

Optical drive



① SE-709
② SE-857
③ SE-858
④ SW-1125G

1-1-2. Locations of Main Mechanical Parts



① CCD unit
② Filter knob
③ LCD Hinge assembly
④ LCD back light
⑤ Fan motor (exhaust)
⑥ Fan motor (drive)
⑦ Loader assembly
⑧ Cleaner assembly
⑨ Loading motor assembly
⑩ Drive sub assembly
⑪ Optical block assembly
⑫ Seek motor assembly
⑬ Spindle motor

1-2. Circuit Description

1-2-1. Camera System

AT-177 board

The AT-177 board is the microprocessor board that controls the camera block.

1. Microprocessor peripherals

The CPU (IC209) uses SH2A (R5S7206), and the clock provides 32 MHz from an external source that is six multiplication in the CPU so that the clock runs on 192 MHz. The memory is composed of 64 MBit flash memory (IC302, IC303), 16 MBit SRAM (IC3056), and 1 MBit FRAM (IC308).

2. A/D input of the CPU

The A/D port equipped to the CPU is connected to the following signal lines and monitored: CC position, ND position, temperature, IRIS position of a camera lens, ZOOM position, and mic volume level.

3. Internal communication

The serial communication includes intercommunication with the BIeConSh IC on the DCP-44 board, the writing controls to the character generator IC, and intercommunication with the disc.
The parallel communication is equipped with the 8-bit data line, the total 11-bit address line (A0-A7, A14-A16), control line clock, XRD, XWR, OE, DIR, CS, and (QWERTY, ZXCV, TG).
In addition, the intercommunication is performed with EEPROM on the DCP-44 board, the DAC and I/O port IC for the video signal, and the I/O port IC on the FP-157 board with the I2C line that is installed directly to the CPU.

4. Memory stick circuit

The memory stick controller IC (IC610) is driven at 16 MHz, and the two-way communication and the clock signal are directly connected from the connector (CN602) to the memory stick connector of the MS-86 board via the coaxial harness. This is compatible with the Memory Stick PRO/DUO.

5. External communication

The 2 channel serial communication driver CXD9093R (IC411) is equipped and performs external communication with the remote control unit RM-B150/B750.

6. ROM jig connector (CN601)

The connector CN101 that can be connected to the jig for writing the boot program (MS-86 board) is included.

DCP-44 board

The DCP-44 board consists of the block for A/D conversion of the analog RGB signal from the PA-342/PA-342A/PA-343/PA-343A/PA-344 board via the feedback clamp circuit, the cam-era DSP block that performs the signal processing, the dri-ver block that sends the analog signal that is D/A convert-ed to the outputs, and the I/F block to the AT-177 board.

After passing through the pre-filter (FL300 to FL302), the analog RGB signal input from the PA-342/PA-342A/PA-343/PA-343A/PA-344 board is converted to 74 MHz rate 14-bit digital RGB sign-al by the A/D converter (IC107 to IC109), then input into the camera processor IC (IC600).

The camera signal processor IC (IC600) detects the average value and the peak value of the camera video signals that are required for the AUTO operations of the camera such as AUTO black balance, AUTO white balance, and AUTO iris control. The detected average value and peak value are sent to the AT-microprocessor on the AT-177 board. In addition to the above operations, the 25/30 PsF conversion function and the 1080 to 720 conversion function are realized by using the DDR SDRAM (IC700 to 704).
After passing through white balance, white shading, and flare correction, the camera main video signal performs the Digital GAIN UP, then performs the Digital Noise Reduction. Then, the matrix signal and the detail signal are added to perform pedestal control, gamma correction, knee correction, and white clip processing. After passing through the selector circuit with which either the camera main video signal or the color bar signal can be selected, the selected signal is output from IC (IC600) to IC800.

The digital VBS signal and the digital Y signal for VF supplied from the camera signal processor IC (IC800) are converted into the analog VBS signal and analog VF signal by the D/A converter* (IC1513, IC1524, IC1525). After passing through the circuit with which either the camera analog VBS signal or the VF Y can be selected, the selected signal is output to the TEST OUT connector.
After passing through the circuit with which either the GENLOCK IN connector input or the video signal can be selected, the selected signal is output to the VF connector.
In addition, the sync separation circuit and the PLL circuit to synchronize with the external input video of the GEN-LOCK IN connector are included.
The detected average value of the video signal detected in the camera signal processor IC (IC600) and peak value are loaded to the AT-microprocessor on the AT-177 board through the 8-bit data bus.

At the same time, various control signals are controlled by the AT-177 board via I/O Expander (IC3, IC4, IC67).

All volumes are controlled electronically, and the level adjustment is adjusted from the menu.

The main functions of IC800 are the down-conversion HD to SD, the conversion 720 to 1080 for VF output, and the VF DETAIL generation processing digital ECN processing.
The camera main signal of the SD system is output to IC1000.

After performing the multiplex and parallel-serial conversion on the character signal, audio signal, and the ancillary signal in IC1000, the HD signal and SD signal output from IC800 pass through IC (IC1112, IC1113) and are output to SDI1 and SDI2 connectors as the HD-SDI and SD-SDI signals. After another system performs scaling in IC1000 through the SDRAM (IC1309), the HD signal output from IC800 passes through the D/A converter (IC1518) and the video signal is sent to the LCD display.
The HD signal output from IC600 is sent to the recording system (DVP-45 board) through multiple character signals in IC1000. After the signal from the RX-105 board on the SDI input option and the SDI signal from the 50-pin I/F are selected internally in IC1000, the signals are separated into the video signal, audio signal, and the ancillary signal, then sent to the recording system (DVP-45 board).

∗ : The main functions of IC800 are the down-conversion HD to SD, the conversion 720 to 1080 for VF output, and the VF DETAIL generation processing digital ECN processing. The camera main output of the SD system is output to IC1000.

1-2-2. CCD Block

PA-342/PA-342A/PA-343/PA-343A/PA-344 board

The CCD drive pulses that are supplied from the TG-260 board are amplified so that these pulses can drive the CCD imagers directly (IC2: H Driver). On the other hand, the CCD output signals are amplified approximately two times and input to IC10. The video signal is drawn by the co-related dual sampling inside IC10 and GAIN UP of 0 to 12 dB is performed by the internal GAIN AMP. In addition, the differences in the CCD sensitivity are adjusted by adjusting GAIN. In addition to the above operations, the temperature that is detected by the temperature sensor (IC4) is converted to the voltage data and is sent to the AT-177 board via the DCP-44 board.

TG-260 board

The pulses that drive the CCD imagers and the pulses that are used for sample-and-hold of the CCD output signals are generated by IC8 and are sent to the DR-617 board. These pulses are generated from the 74 MHz clock in synchronization with the HD VD signal input from the DCP-44 board. In addition, the TG-260 board has an interface circuit with the optical filter.

DR-617 board

The CCD drive pulses input from the TG-260 board and the sample-and-hold pulse are latched and output to the PA-342/PA-342A/PA-343/PA-343A/PA-344 boards. In addition, the DR-617 board has the V driver of CCD.
The CCD V sub voltage and CCD sensitivity adjustment data are recorded in the EEPROM (IC20).

1-2-3. Video Signal System

DVP-45 board

1. Baseband/Video signal processing system

<Recording system>
The component parallel digital video signal supplied from the video circuit of the DCP-44 board is input to LVIS (IC400) of the DVP-45 board.
Signal pre-processing such as the filtering and scaling is performed in this system.

<Playback system>
The playback digital video data is loaded from LVIS (IC400) and sent to the DCP-44 board via the MB board as the component parallel digital video signal.
The component parallel digital video signal sent to the DCP-44 board is distributed to each path of HD/SD-SDI, VF, COLOR-LCD, and down-conversion and encoding to the composite video signal are performed according to the setting.

2. Video compression signal processing system

<Recording system>
The recording digital video signal that has undergone signal processing on the DVP-45 board is sent to MPEG2-VIDEO Codec (TORINO: IC1000, 1200, 1400) and compressed to the MPEG-2 VIDEO format.
The compressed digital video data is sent to PIER G4 (IC1900) and written to PIER_SDRAM (IC1901 to IC1904).
The recording digital video signal is encoded to MPEG4-VIDEO format in LVIS (IC400) at the same time and generated as the Proxy video data.
The generated Proxy video data is sent to PIER G4 (IC1900) and written to PIER_SDRAM (IC1901 to IC1904).

The recording digital data via i.LINK/network is sent to PIER G4 (IC1900) via the PCI bus and written to PIER_SDRAM (IC1901 to IC1904).
While recording on a disc, the data in PIER_SDRAM (IC1901 to IC1904) is sent to the DR-606 board via the ATA interface.

<Playback system>
The playback video data and the Proxy video data are sent to PIER G4 (IC1900) via the ATA interface and written to PIER_SDRAM (IC1901 to IC1904).
The playback digital video data in PIER_SDRAM (IC1901 to IC1904) is sent to the MPEG2-VIDEO Codec (TORINO: IC1200, IC1400). Decode processing is performed and then the data is sent to LVIS (IC400).
The playback Proxy video data in PIER_SDRAM (IC1901 to IC1904) is sent from PIER G4 (IC1900) to LVIS (IC400) and decode processing is performed.
The Proxy video data is used as the video signal during the search.
The playback video data in PIER_SDRAM (IC1901 to IC1904) is provided to i.LINK/network via the PCI bus as the MXF file data.

3. Sync signal system
Whether the status is on record or on playback, 74/27 MHz clock, HD-F, HD-V, HD-H, HD-PB-F, SD-F, SD-V, and SD-H that are always input from the DCP-44 board are the reference signal.
Based on these reference clocks, the video sync timings and system timings are generated.

1-2-4. System Control

SY-355 board

1. Disc record/playback system control
The following functions are realized using the RISC microprocessor (hereinafter refer to as CPU: IC 200) as the CPU for the system control on the SY-355 board.

<PCI bus interface>
CPU is connected to PIER G4 (IC1900/DVP-45 board)/ FAM controller on the DVP-45 board and PCI-PCI Bridge (IC900) via the PCI bus interface to receive and send data with one another and perform control.
The PCI bus interface communicates with the following devices by relaying through PIER G4 (IC1900/DVP-45 board).
- CAVA (IC200/DVP-45 board)
- MPEG2-VIDEO CODEC (IC1000, 1200, 1400/DVP-45 board)
- AUDIO REC/PB DSP (IC800, 801/DVP-45 board)/ AUDIO Low Resolution DSP (IC900/DVP-45 board)
- LVIS (IC400/DVP-45 board)
- Optical Drive (DR-606 board)
- AT microprocessor (AT-177 board)
- FP microprocessor (FP-157 board)
- Character generator (IC503/DCP-44 board)
- LTC generator/reader (PIER G4 (IC1900) built-in)

The PCI bus interface is connected to the Linux system on the SY-355 board via the PCI-PCI Bridge (IC900/SY-355 board) and receives and sends data to the controllers.

<Memory controller>
- SDRAM (SY-355 board: IC201 to 204) control (32 bit x 64M word)
- Flash memory (IC505, IC506/SY-355 board) control (32 bit x 16 M word)

<Serial interface>
- EEPROM control saving the setting data

<External control bus (CPU LOCAL bus)>
- IN port/OUT port control
  RESET signal output on each device, loading the switch setting, and similar signals
- CAVA/PIER G4/FAM/BRIDGE each FPGA configuration
- FRAM (IC507/SY-355 board) control

2. Application device control system (Linux)
This is the system that uses RISC microprocessor (hereinafter refer to as CPU: IC1300) on the SY-355 board to control the device for the application. Linux is used as the OS.
CPU and peripheral circuit configuration is almost same as that of the system control.

<PCI bus interface>
The CPU exchanges data with the USB controller (IC1500) via the PCI bus interface. In addition, the CPU exchanges the data with the CPU of the system control via the PCI-PCI Bridge (IC500/SY-355 board) on the same bus.

<PCI BRIDGE (IC900)>
The functions of PCI BRIDGE are data relay of the PCI bus and the I/F function to the OSD display controller on the LVIS (IC400/DVP-45 board).

<USB HOST Controller (IC1500)>
USB HOST Controller exchanged data with the USB devices such as the flash memory using the interface compatible with the USB 2.0.

<Ether interface>
Ether interface controls the Ether PHY (IC1/CN-2946 board) and connects to the network via it.

FP-157 board

The FP-157 board has the FP_CPU (IC921) as the sub-microprocessor and the hardware consists of the synchronous and asynchronous serial communication, I2C communication bus, and the 8-bit bus. The main function is controlling the audio system.

Main functions

- Synchronous serial communication
  The functions of synchronous serial communication are the color LCD monitor setting, monochrome LCD display, audio D/A setting, analog wireless communication, and the ITORON communication.
- Asynchronous serial communication
  Digital wireless communication.
- I2C bus
  The rear connector, detection such as PLAY/STOP key, Info_BATTERY communication, Real Time Clock communication, Serial EEPROM (Memory) communication, and I/O control communication make up the 3-channel I2C bus.
- 8-bit bus
  The 8-bit bus controls the serial communication bus (SDA,SCL) of the 3-channel I2C bus controller (Parallel bus to I2C_bus Controller).
- CPU I/O
  The CPU I/O loads the A/D and controls the I/O port terminal.

Main blocks

1. Audio mode control
2. AUDIO level indication
3. STOP/PLAY keys control
4. CTL/TC/UBIT control
5. Real Time Clock control
6. WARNING_LED control and alarm tone control
7. Wireless receiver (optional equipment) control
8. Software download function
9. Power supply voltage measuring circuit
10. Info-Battery communication circuit
11. POWER OFF soft control circuit
12. FP_CPU backup circuit
13. Backup lithium battery voltage measurement circuit
14. Independent operation of FP_CPU
15. REAR input control
16. REAR XLR automatic insertion detection circuit control (DET-47 board and sensor holder)
17. Color LCD monitor drive control and switching/ rotation detection circuit
18. Nonvolatile memory control
19. Monochrome LCD display circuit with back light

Description of each block

1. Audio mode control

Audio control is performed by receiving the audio mode information and the menu setup information from the ITORON (CPU) on the SY-355 board.
The switch information of the three positions is connected to the AD terminal of the CPU and processed as the AD signal of the three-valued data.
The audio is switched in the I2C bus PCA-9555 (I/O port: IC923, 924).

2. AUDIO level indication

The digital signal applied on the DSP is converted to 16 bits and set in the register in DSP.
ITRON (CPU) reads and displays it on the color LCD monitor. The peak hold time is approx. 1400 ms.

3. STOP/PLAY keys control

Each switch on the KY-623 board is connected to PCA-9555 for I2C bus to read the ON/OFF information of the switch and turn on the LED. The switch information is transferred to ITORON (CPU).
At POWER-ON, the LED of EJECT, F REV, PLAY, F FWD are turned on, initialized, and turned off.

4. CTL/TC/UBIT control

The switch information of the three positions is connected to the AD terminal of the CPU and processed as the AD signal of the three-valued data.
The ON/OFF information of the switches are transferred to the ITRON (CPU) and displayed on the color LCD monitor.

5. Real Time Clock control

The Real Time Clock IC (IC908:RX-8025NB) uses nonadjustable clock for the I2C bus. The accuracy is ±15 seconds per month. When the power is turned on, the FP_CPU reads data and send it to ITRON (CPU)
The ITRON (CPU) sends the time data to the Camera CPU

of the AT-177 board. The viewfinder uses the time data for displaying the time. The data for year, month, day, and time of the clock can be changed using the menu.
The settings for year, month, day, and time are sent to the FP_CPU and the year, month, day, and time are written to the Real Time Clock IC.

6. WARNING_LED control and alarm tone control

The WARNING information is supplied from the ITRON (CPU) that is used to turn on and off the WARNING LED on the FP-157 board.
The 1 KHz square wave generated from the PWM generator circuit inside the FP_CPU alarm tone is used as the alarm tone.

7. Wireless Receiver Control (Optional function)

This communication circuit can control both analog and digital wireless receivers.
Analog wireless receivers use the conventional method of synchronous serial communication (200 Bps).
(Interval time: 80 ms)
Digital wireless receivers use 38 KBps asynchronous serial communication to handle large amounts of communication data.

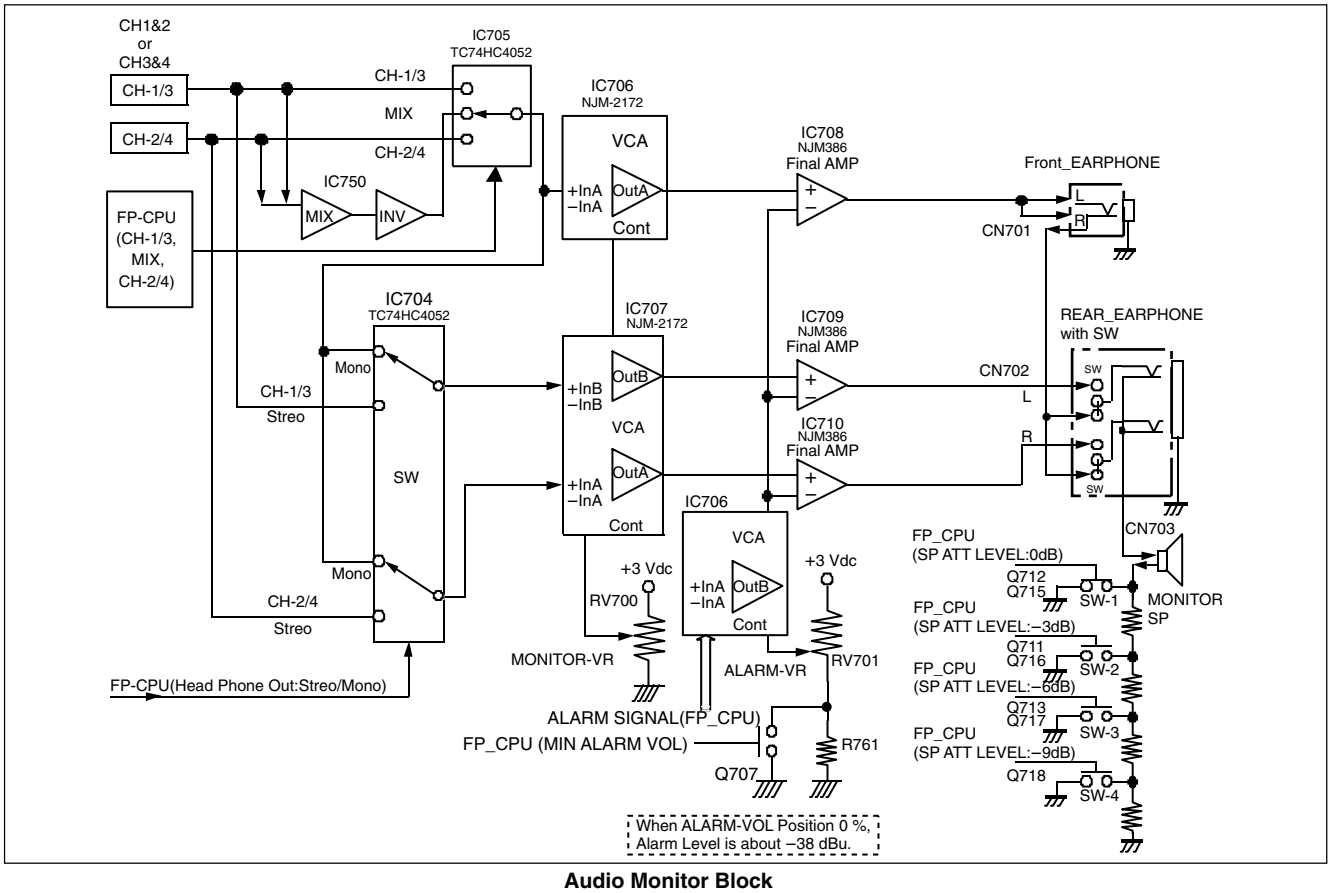
With a built-in wireless receiver, when FP_CPU is in the POWER-ON state, the receiver type is determined and information such as the transmission RF sensitivity is loaded. This data is transmitted to Camera CPU via ITRON (CPU) and can be viewed on the viewfinder.

8. Software download function

FP_CPU has internal flash memory so the software can be overwritten. Load the software in the memory stick into the camera microcomputer and transmit the data through ITRON (CPU) in the SY-335 board to the FP_CPU where it is written.

9. Power voltage measurement circuit (batteries other than the info battery)

Power voltage measurement circuit (IC839) outputs two types of DC voltage from DA output of the FP_CPU and switches voltage in the IC839 6-pin to switch between a measurement range of +9 V to +14 V and +12 V to +17 V. The voltage measurement is sent to ITRON (CPU) as the voltage value. ITRON calculates the remaining battery charge, creates voltage display data, and returns the data to FP_CPU. FP_CPU displays the voltage display data on the monochrome LCD. The voltage display data can be checked at the same time in the status menu for the color LCD.



Audio Monitor Block

10. Info battery communication circuit.
This equipment supports batteries with SM Bus specifications. The serial communication bus (SDA, SCL) for IC916 (Parallel bus to I2C_bus Controller) connected to the FP_CPU bus passes through IC927 and IC928 (switching switch) and connects to the serial terminal of the info battery. The Serial Clock Rate is 88 KHz.
The battery type, remaining time, and other information is loaded onto FP_CPU and transmitted to ITRON (CPU). ITRON (CPU) calculates the remaining battery charge and creates remaining charge display data, and transmits the data to Camera CPU and FP_CPU. FP_CPU displays the remaining charge display data on the monochrome LCD. The remaining charge display data can be checked at the same time in the status menu for the color LCD.

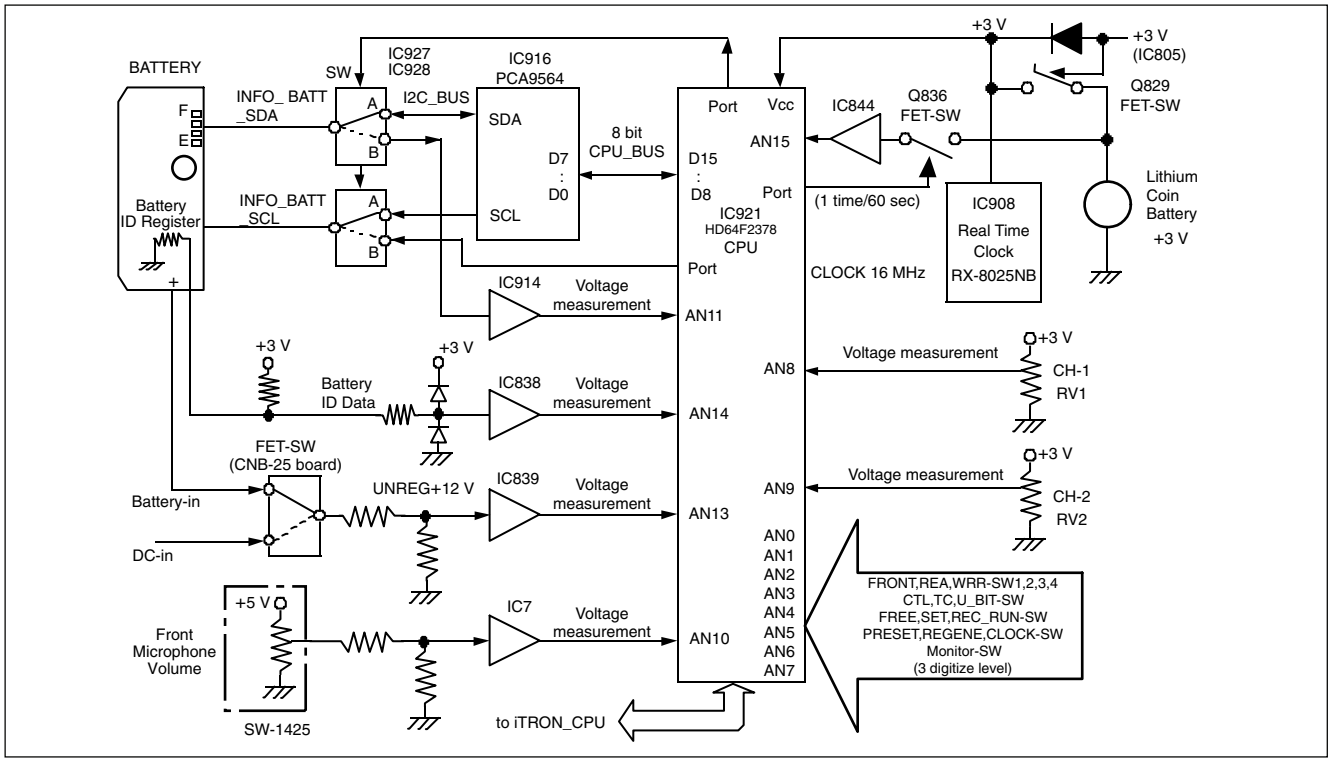
11. Power off software control circuit
FP_CPU detects the POWER-SW OFF information. When power can be turned on, the "Power OFF" command is sent from ITRON (CPU) and FP_CPU controls the power OFF circuit on the CNB-25 board.

12. FP_CPU backup circuit
Even when power is turned off for FP_CPU, the data is saved for the internal RAM and Real Time Clock (RX-8025NB) through backup on a coin battery. By saving the system data, FP_CPU can be started up quickly when the power is turned on.

13. Backup lithium battery voltage measurement circuit
FP_CPU performs voltage measurement on the backup lithium battery. When recharging is detected, the reduced-voltage information is send to ITRON (CPU).
(Measurement interval time: 60 s)
Current is prevented from running through FET-SW (Q836) in order to prevent power from being lost during measurement. Furthermore, reverse current above +3 V is prevented with FET-SW (Q829), thus extending the life of the lithium battery. The battery life is guaranteed for about 5 years.

14. FP_CPU independent operations
When the POWER-SW is set to power off, power is supplied from the UNSW +12 V power circuit to display the counter and other information on the monochrome LCD. Power is supplied to each power regulator with IC830 (hyposaturation regulator 8 V) and independent operations can be performed. The operations can be turned on or off from the menu.

15. REAR input control
The serial communication bus (SDA, SCL) for IC917 (Parallel bus to I2C_bus Controller) connected to the FP_CPU bus sends control for the AXM-38 board through the motherboard with IC202 (PCA-9555: I2C_I/O_PORT) on the CNB-25 board and acquires the following information: REAR_XLR automatic insertion detection



Voltage Measurement Block Overview

circuit control, microphone amplifier gain control, operational amplifier power control, and digital/analog input switching switch information.

16. REAR XLR automatic insertion detection circuit control (DET-47 board and sensor holder)

Combine the DET-47 board on the sensor holder and connect with the harness to the AXM-38 board.
The infrared light emitter uses one LED that connects to the CH1 and CH2 receivers positioned in the middle of the sensor holder on the left and right sides. When “Detection ON” is set from the menu and the XLR connector is inserted into the 3P-XLR connector, the infrared light is blocked, the output from the receivers changes from L to H, and insertion is detected. At this time, CH1 and CH2 operate automatically and the XLR input on the REAR area is selected. (CH3 and CH4 are not switched automatically.) Detection interval time is 200 ms.

17. Color LCD monitor drive control and opening/rotation detection circuit

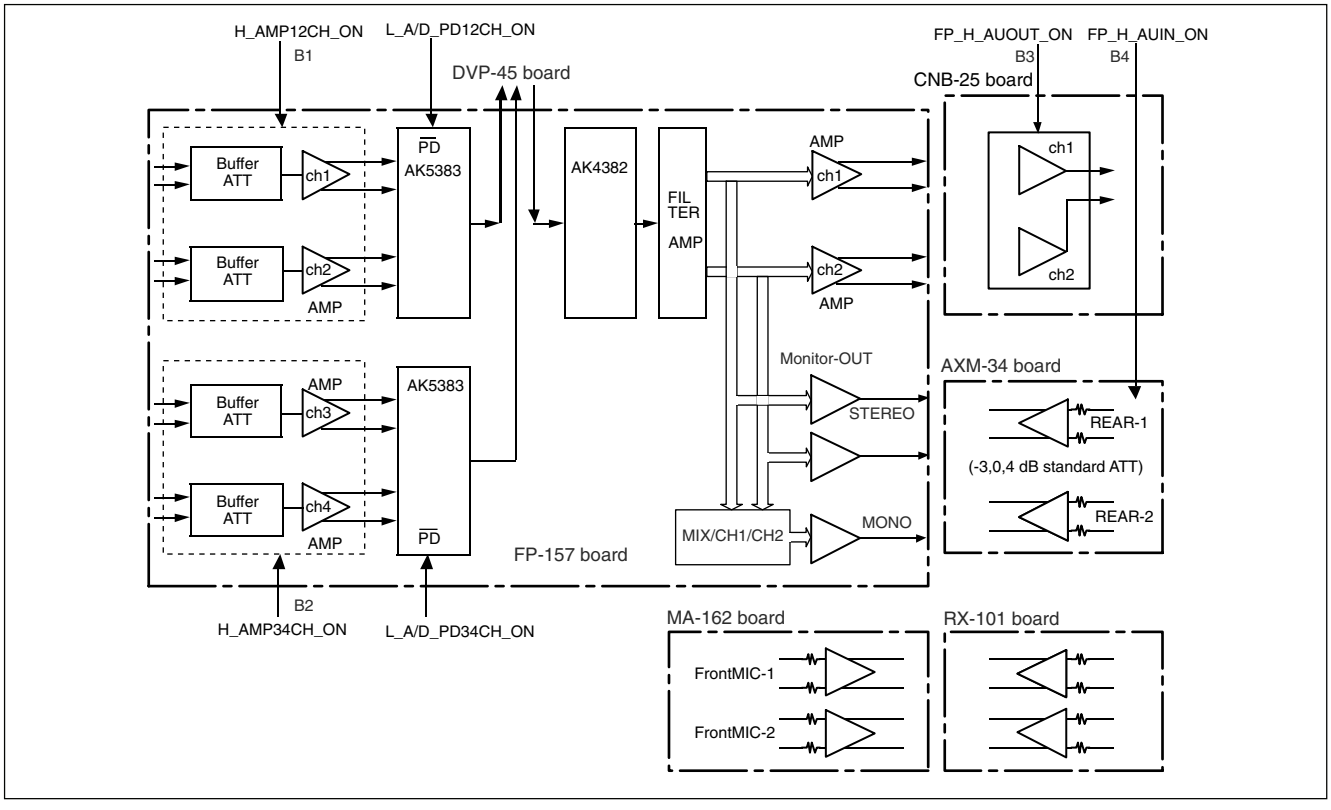
The CN108 connector is connected to the power supply and the RGB signal for video, the passes through CN802 to connect directly into the LCD driver.
FP_CPU and LCD driver are connected with synchronous serial communication. During POWER_ON, parameters such as brightness and contrast can be set. This information is saved in the LCD (PD-118 board) nonvolatile memory and the FP-157 board IC913 (nonvolatile memory).
Rotation is detected by the rotation sensor switch in DET-45 after passing through CN802.
Opening and closing is detected from the hole terminal (H801) on the FP-157 board and the field intensity from the permanent magnet (neodymium: Ne-FeB).

18. Nonvolatile memory control

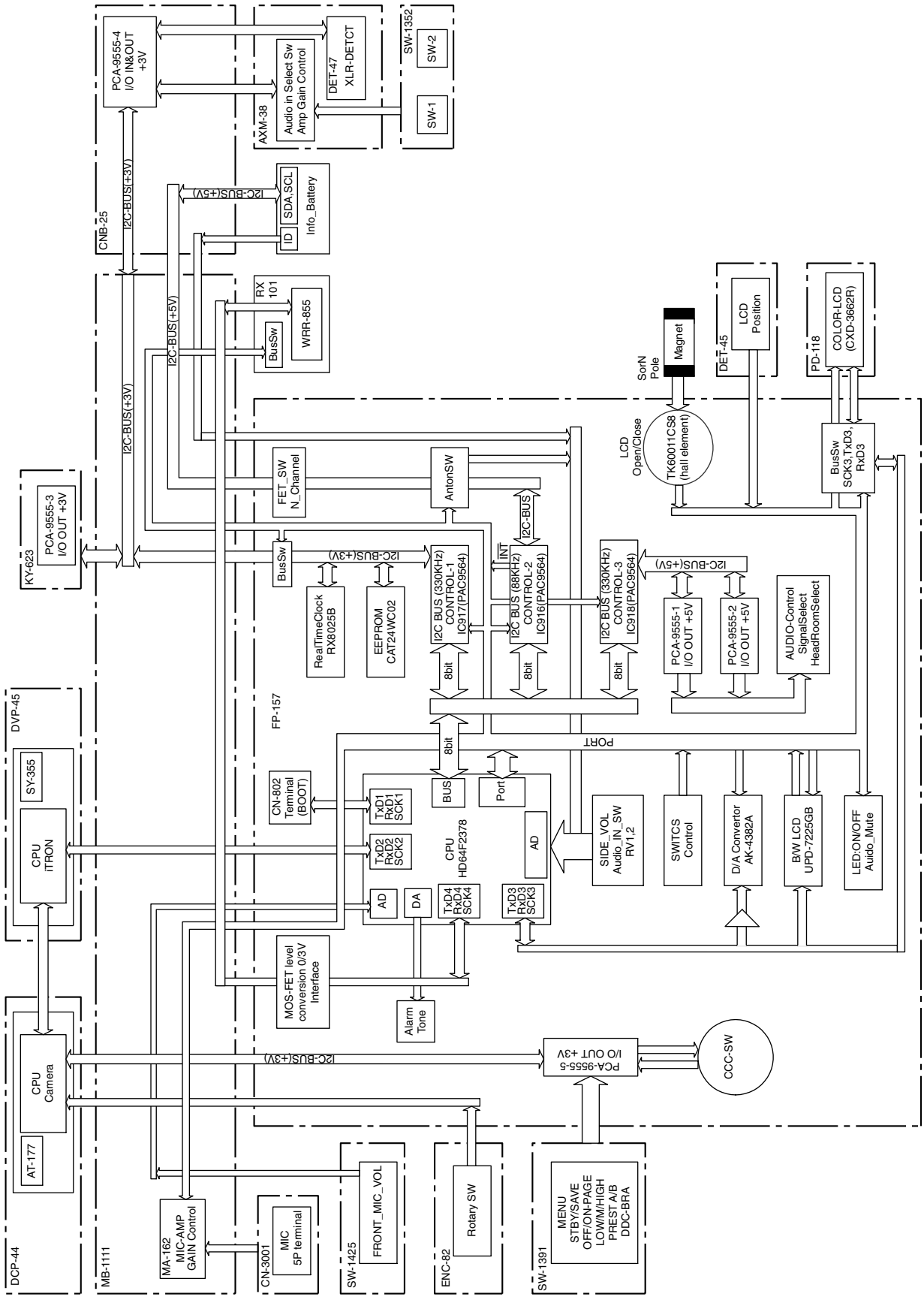
IC907 on the FP-157 board is nonvolatile memory that supports the I2C bus.
This memory stores system information such as the A/D and D/A error compensation values and color LCD settings. During POWER-ON, this information is sent to ITRON (CPU) and the color LCD device.

19. Monochrome LCD display circuit with backlight

FP_CPU and IC806 (UPD7225GB) are connected by a 500 KHz serial communication port. IC806 is an LCD controller/driver that is programmable with software. ND800 displays the BATTERY value, DISC capacity, time, and counter value on the monochrome LCD at three hour intervals.



Audio Power Save Block



Audio System Control

1-2-5. Digital Audio System

DVP-45 board

1. Audio signal processing system

<Recording system>

The analog audio signal input from the AUDIO IN connector is converted into a serial digital audio signal (two channels) with the AUDIO A/D converter on the FP-157 board. The digital audio signal enters CAVA (IC200) of the DVP-45 board through the MB-1111 board.

The serial digital audio signal (four channels) input from the AES/EBU INPUT connector undergoes level conversion in the AXM-38 board and is input into CAVA (IC200) of the DVP-45 board. After the signal is decoded in CAVA (IC200), it is synchronized and converted to the same sampling rated as the recorded video signal with the sampling rate converter (IC700, IC703).

Digital audio signals (eight channels) that include input HD-SDI signal (when the option is attached) are decoded with the DCP-44 board. Then, the signals are converted into serial digital audio signals and entered into CAVA (IC200) of the DVP-45 board via the MB-1111 board.

CAVA (IC200) selects the above entered digital audio signal and sends it as the recorded audio data to AUDIO REC DSP (IC800).

<Playback system>

The playback digital audio signal that underwent playback signal processing in AUDIO PB DSP (IC801) is entered into CAVA (IC200), then separated and converted into the serial digital audio signals for analog output systems and digital output systems.

The analog output system serial digital audio signal is sent to the AUDIO D/A converter in the FP-157 board via the MB-1111 board. After it is converted into an analog audio signal, the signal is output to the AUDIO OUT connector, headphone, and monitor speaker.

The digital output system serial digital audio signal is sent to the DCP-44 board via the MB-1111 board. The signal is combined with the video signal in the DCP-44 board and output as the HD/SD-SDI audio signal.

2. Digital signal processing system

<Recording system>

The recording audio data from CAVA (IC200) undergoes signal processing such as recording level control, muting process, and MIX/SWAP in AUDIO REC DSP (IC800), and then it is sent to PIER G4 (IC1900) as recording digital audio data.

The recording digital audio data is sent to AUDIO Low Resolution DSP (IC900) through CAVA (IC200), Proxy audio data is generated in compressed A-Low format, and the data is sent to PIER G4 (IC1900).

The above recording digital audio data and recording compressed Proxy audio data are written PIER_SDRAM (IC1901 to IC1904).

The recording digital data from the i.LINK/network is sent to PIER G4 (IC1900) via the PCI bus and written to the PIER_SDRAM (IC1901 to IC1904).

While recording to a disc, the data in PIER_SDRAM (IC1901 to IC1904) is sent to the DR-606 board via the ATA interface.

<Playback system>

The audio data and the Proxy audio data are sent to PIER G4 (IC1900) via the ATA interface and written to the PIER_SDRAM (IC1901 to IC1904).

The playback digital audio data in PIER_SDRAM (IC1901 to IC1904) is sent from PIER G4 (IC1900) to AUDIO PB DSP (IC801), After performing signal processing such as limiter, playback level control, and mute processing, the signal is input to CAVA (IC200).

The audio data and Proxy audio data in PIER_SDRAM (IC1901 to IC1904) is provided to i.LINK/network via the PCI bus as the MXF file data.

3. Sync signal system

The reference signal is always the 24.576 MHz clock entered from the DCP-44 board, whether recording or playing back.

This reference clock is divided and timing signal for 256 FS, 64 FS and FS audio processing is generated.

1-2-6. Audio System

Block structure

Front microphone amp	: MA-162 board
Input signal selector	: FP-157 board
A/D circuit (CH1&2)	: FP-157 board
A/D circuit (CH3&4)	: FP-157 board
D/A circuit	: FP-157 board
Final amp	: CNB-25 board
Monitor amp	: FP-157 board
Rear input	: AXM-38 board
DPS operation processing	: DVP-45 board

1. Front microphone amp
The front microphone amp on the MA-162 board comes with a gain switch. (30 dB/20 dB/10 dB)
Gain switching can be performed from the menu.
(−60 dBu/−50 dBu/−40 dBu)

2. Input signal selector
The audio signal can be selected with the analog switch (IC1 to IC4) based on the side panel switch information.

3. A/D circuit
A/D uses 24-bit AK-5383. The sampling frequency is 48 KHz.
The first has an ATT circuit for head room level adjustment.

4. D/A circuit
D/A uses 24-bit AK-4382A. The sampling frequency is 48 KHz.
The latter has a differential LPF circuit and an output level amp circuit.

5. Final amp
The final amp is located on the CNB-25 board and is connected to the AXM-38 board with the connector-to-connector. The CH1 and CH2 output signals are output from the 5-pin XLR connector.
The output level can be selected as −3 dBu, 0 dBu, or +4 dBu from the menu.

6. Monitor amp
Composed of the monaural amp for the front earphone and stereo amp for the rear earphone, the volume control is performed with the operational amp with electronic volume (NJM2172).

7. Rear input
The rear input is composed of the following: a switch for Line In, AES/EBU, and MIC-IN; +48 V ON/OFF-SW; automatic detection circuit (DET-47 board) for the 3-pin input XLR connector; and the microphone amp (10 dB/20 dB/30 dB).
Gain switching can be performed from the menu.
(−60 dBu/−50 dBu/−40 dBu)
Line In input level setting can be switched to +4 dBu, 0 dBu, or −3 dBu with the slide switch on the AXM-38 board. (Open the inside panel.)

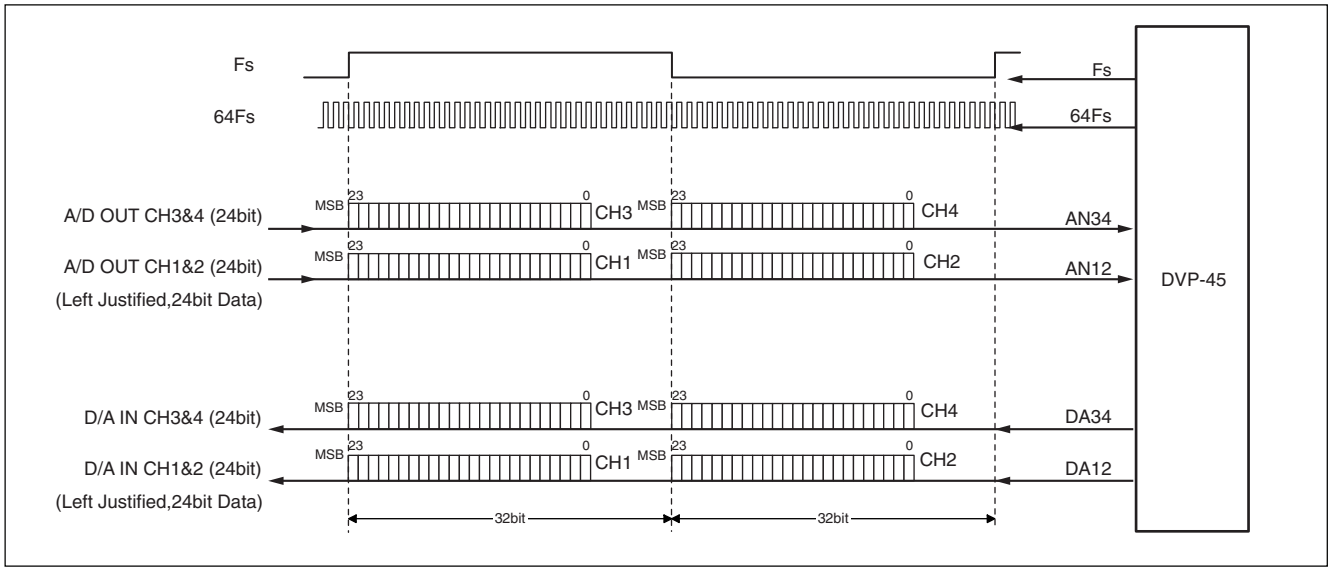
Operation description

After the power to the device is turned on, each port in the FP-157 board CPU is initialized, the necessary resistor data is set, and MUTE is cancelled. (After approximately 3 seconds, the digital EE sound can be monitored.)

The front mic signal passes through the MA-162 board and MB-1111 board before entering the input signal selector (analog switch: IC1 to IC4) of the FP157 board.

The rear input signal passes through the AXM-38 board, CNB-25 board, and MB-1111 board before entering the input signal selector (analog switch: IC1 to IC4) of the FP-157 board.

The information from the FRONT/REAR/WIRELSS switch position can be obtained by loading the three



A/D & D/A Signal Format Diagram

signals from the switch connected to each A/D terminal in the FP_CPU (S1 to S4).
FP_CPU sends the switch position information to ITORN_CPU of the SY-355 board, and then selects the audio signal by receiving the audio mode information from the ITORN_CPU.

The selected CH1 and CH2 system signals enter the differential amp (IC5: balance-to-unbalance converter) and pass through the head room level switching circuit and balance-to-unbalance conversion amp for A/D. Then, the signals are applied to the A/D converter IC (IC102: 24-bit). The serial digital audio signal (2 channels) converted to digital is entered to VAX (IC200) of the DVP-45 board via the MB-1111 board
VAX (IC400) selects the entered digital audio signal and sends it as the recorded audio data to AUDIO REC DSP (IC800).

DSP for audio performs high-speed processing for operations such as gain processing during manual operations, AUTO processing, LIMITER processing, 67 Hz notch filter while using the front mic, LPF (15 KHz) ON/OFF, internal SG, and audio level detection.

On the other hand, the front volume and side volume are connected to the A/D terminal in the CPU and the volume voltage is converted into digital with the internal 10-bit A/D. After being converted into a multiplication value for DSP, the signal is sent to ITORN_CPU.
ITORN_CPU performs operation processing on the combined front and side volumes and sends the results to DSP.

The D/A serial signal for playback passes through the DVP-45 board and MB-1111 board and enters the digital switch (IC461) of the FP-157 board. In the monitor CH-SW, CH1&2 or CH3&4 is selected and applied to the 24-bit D/A converter (IC453).

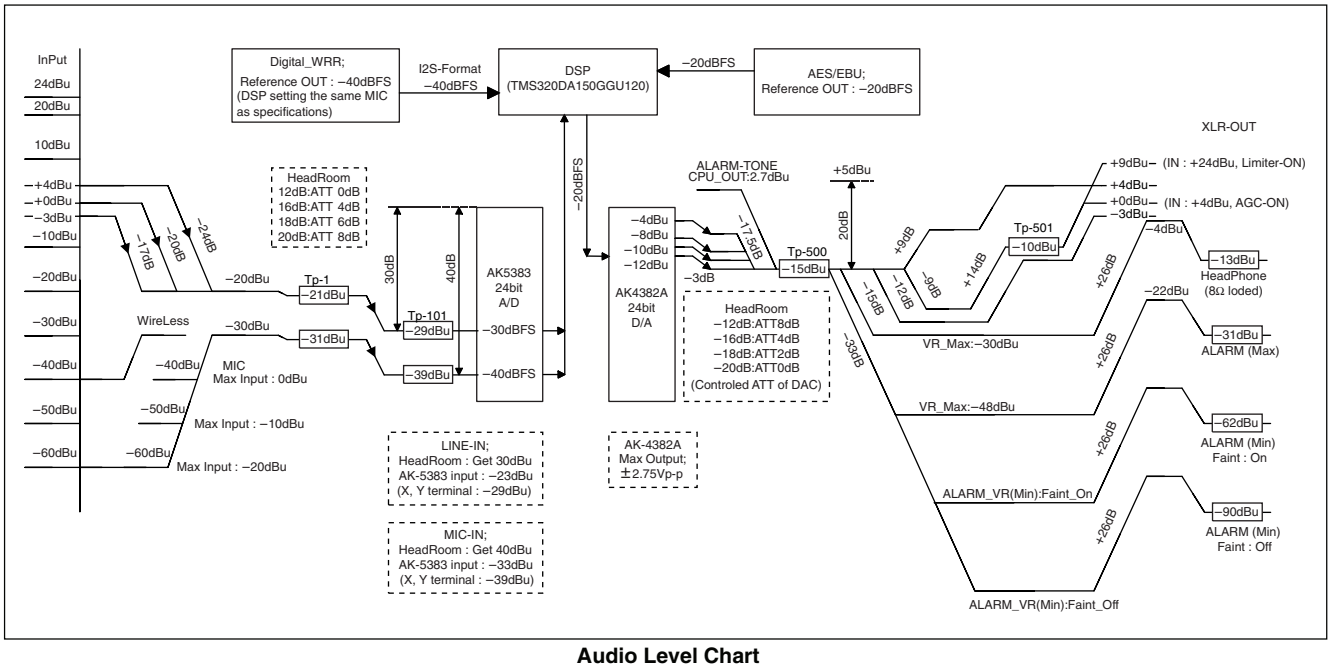
The D/A converter output passes through the differential LPF, ATT balance-to-unbalance conversion amp (IC514), and MB-1111 board. It is applied to the final amp (IC200, IC201) of the CNB-25 board and output from the 5-pin XLR connector (AXM-38 board).

The audio signal for the monitor passes from IC520/620 output through the monaural, mix, and stereo switching switch (IC703, IC704). Then, the signal is applied to the operation amp (NJM2172) with electronic volume.
The rear earphone can be switched between stereo and mono from the menu.
The monitor speaker output level can be lowered from the volume. Select one of the following for the ATT value: 0, −3 dB, −6 dB, or −9 dB.

1-2-7. Audio DSP Operation Processing

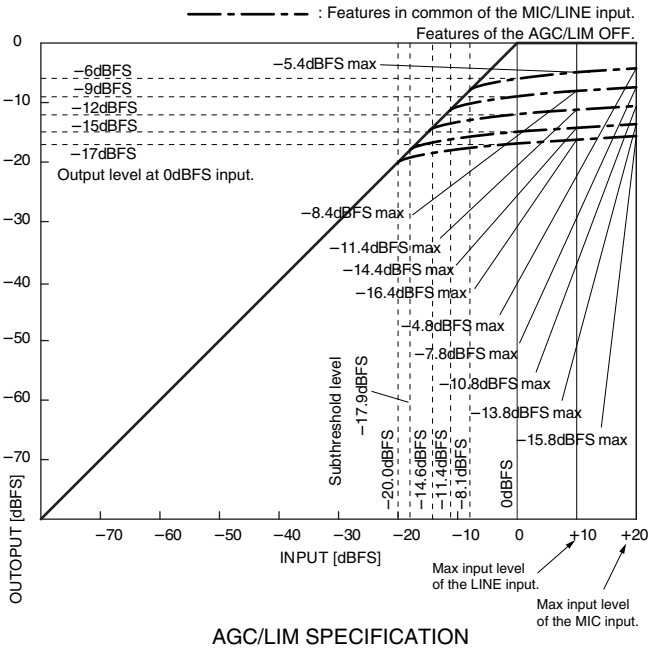
Main functions

1. AUTO-AMP: Two to four types of characteristics can be selected depending on each headroom.



Audio Level Chart

2. LIMITER characteristics: Two to four types of characteristics can be selected depending on each headroom.
3. OUT_PUT_LIMITER characteristics: Performs LIMITER processing on the PB and EE_OUT. ON/OFF.
4. Turns on and off the HPF (67 Hz) and LPF (15 KHz; −24 dB). (Runs automatically during front microphone selection)
5. Performs gain control when CH1 and CH2 are on MANUAL status. (VR-MAX: +12 dB)
6. CH3 and CH4 turn on and off the AUTO operation.
7. Internal SG: Four types of 1 KHz/−12, −16, −18, −20 dBFS.
8. Recording error correction: +0 to −2 dB (started from the terminal)
9. Playback error correction: +0 to −2 dB (started from the terminal)
10. INPUT delay amount: Performs delay processing to match the VIDEO and AUDIO phases of each CH.



AGC/LIM SPECIFICATION

Description of each part

1. DIGITAL AUTO_AMP Processing

Selects the AUTO level from the menu.

AU AUTO SPEC : −6 dB/−9 dB/−12 dB/−15 dB/−17 dB

−6 dB : Linear operation until approx. −9 dBFS. Approx. −6 dBFS at Max.

−9 dB : Linear operation until approx. −12 dBFS. Approx. −9 dBFS at Max.

−12 dB : Linear operation until approx. −15 dBFS. Approx. −12 dBFS at Max.

−15 dB : Linear operation until approx. −18 dBFS. Approx. −15 dBFS at Max.

−17 dB : Linear operation until approx. −20 dBFS. Approx. −17 dBFS at Max.

2. DIGITAL In Put LIMITER characteristics (only during MANUAL)

Selects the LIMITER level from the menu.

AU AUTO SPEC : −6 dB/−9 dB /−12 dB/−15 dB/−17 dB

−6 dB : Linear operation until approx. −9 dBFS. Approx. −6 dBFS at Max.

−9 dB : Linear operation until approx. −12 dBFS. Approx. −9 dBFS at Max.

−12 dB : Linear operation until approx. −15 dBFS. Approx. −12 dBFS at Max.

−15 dB : Linear operation until approx. −18 dBFS. Approx. −15 dBFS at Max.

−17 dB : Linear operation until approx. −20 dBFS. Approx. −17 dBFS at Max.

3. DIGITAL Out Put LIMITER characteristics

Turn the LIMITER ON/OFF from the menu.

ON : Linear operation until approx. −12 dBFS, approx. −11 dBFS (at Max.)

OFF : Turn off LIMITER at 0 dBFS.

4. Gain control during MANUAL

The A/D converted VR value is converted into a DSP multiplication value at FP_CPU and synchronized with the VIDEO1 frame, then handed over to the CPU to set in the register of the DSP. The maximum variable for volume is +12 dB. (−∞ to +12 dB)

5. Recording error correction

For error correction on the A/D converter for audio, the multiplication value is corrected in the range +0 to −2 dB. Starts from the terminal with the standard signal level applied. (fully automatic)

6. Playback error correction

For error correction on the D/A converter for audio, the multiplication value is corrected in the range +0 to −2 dB. The correction is performed after the playback error correction is completed. Starts from the terminal. (semi-automatic)

The internal SG is used as the standard signal, and the inside panel for each LEVEL_VR is turned and fine-tuned.

1-2-8. Optical Drive System

Recording System

Recording data sent from the DVP-45 board through the ATA bus (Ultra ATA33) is sent to the Blu-ray Disc Controller (BDC) IC300 on the DR-606 board.
The BDC performs signal processing to conform to recording format, such as ATA interface, ECC coding and 17PP (Parity Preserve/Prohibit RMTR) modulation.
The recording data is converted to multi-pulse in the BDC, and the multi-pulse data is sent through the flexible card wire to the optical block to be written into the disc.

Playback System

- Data Playback System
  The RF signal played back from the disc is sent from the optical block to the Front End Processor (FEP) IC200 on the DR-606 board where equalizing and asymmetry correction are performed after the RF signal passes through the AGC. After A/D conversion by the read clock played back in the PLL, the signal is sent to the BDC IC300.
  In the BDC, the signal passes through the adaptive digital filter, and Viterbi demodulation, 17PP demodulation, and ECC decoding are applied to the signal. Then the signal is sent through the ATA bus to the DVP-45 board as played back data.

- Address restoration system
  The address data restored from the disc is sent from the optical block to the FEP (IC200) on the DR-606 board. The analog address data passes through the AGC and BPF and is converted to digital data in the FEP. The digital data is then sent to the BDC (IC300) for address decoding.
  The PLL in the FEP generates a wobble clock (WCK).

Servo System

- Tri-Axis Actuator and SA Actuator
  The object lens of the optical block is controlled for focus direction, track direction, and tilt angle by the tri axis actuator.
  The light reflected from the disc is converted to the electrical signal by the optical block. The electrical signal is input to the FEP IC200, and the focus error signal and the track error signal are detected. The SV DSP IC400 outputs the control data based on the errors to the driver IC501 and controls the focus actuator and the track actuator through the driver.
  The tilt actuator is controlled for its angle against the disc to be optimum based on the tilt adjustment result for the jitter of the playback signal to be minimum and the output of the angular velocity sensor.
  The SA actuator position is controlled for the spherical aberration to be optimum at the start-up adjustment when the disc is inserted. The SA actuator for the double layer disc is controlled to the optimum position every time to jump the layer.

- Seek Motor
  The seek motor controls the position of the optical block so that the track to be recorded or played back is kept within the object lens driving range.

- ND Filter
  The transmission factor of the ND filter is selectable to reduce the laser noise that occurs when the read power light is emitted for the single layer disc.

- Spindle Motor
  The FG generated by the spindle motor is amplified and shaped on the SE-857 board, and is then input into the SV DSP IC400 on the DR-606 board.
  The SV DSP compares the FG frequency with the target frequency, and then controls the spindle motor via the driver IC500.

System Control

The SY CPU IC600 on the DR-606 board performs system control. It controls ATA interface, Data Manager, RF-related ICs, servo ICs, and loader. It also carries out interlocking control, maintenance and error log management of each device including the optical block.
Firmware programs of the SY CPU and DSP as well as sources of each PLD are stored in the flash memory IC602, and the CPU loads them to each device when the power is turned on.
The BDC IC300 and SV DSP IC400 are controlled by the parallel CPU bus, while RF-related ICs are controlled by the serial port through SYS PE IC700.
Adjustment values and hours meter data are stored in the EEPROM IC4 on the SE-857 board.

1-2-9. Power Supply Systems

CNB-25 board

The board checks the input voltage +12 V, and controls distribution of the input power to each circuit board.

- Power ON/OFF Control
  The ON/OFF control is performed in IC1 and IC5. The IC1 input signals include L PWR SW ON signal, H POWERW HOLD signal, EXTDC detection signal, battery detection, excess voltage detection, and low voltage detection. During normal operation, when L PWR SW ON signal is turned to “L”, Q4, 5, 6, and 7 or Q11, 12, 15, and 16 are turned on, and the battery or EXT DC IN +12 V is supplied to respective circuit. The H POWERW HOLD signal is sent from the FP-157 board after the main power of this unit is turned on. Therefore, the power is kept on even if the L PWR SW ON (L) signal is set to OFF (H). In order to turn off the main power of this unit, the L PWR SW must be turned off (H) and the H POWERW HOLD signal must be opened and set to “L”. When the FP-157 board detects that the POWER switch is turned OFF, it sets the POWERW HOLD signal to “L” to turn off the power after a disc operation is completed if the equipment is in the midst of operating a disc.

- Battery/EXT DC selector
  The EXT DC voltage is detected and either battery or EXT DC is selected with priority given to the EXT DC. The IC5 performs the control and Q4, Q5, Q6, and Q7 are turned on when a battery is selected and Q11, Q12, Q15, and Q16 are turned on when the EXT DC is selected.
  In this IC5, a step-up circuit (Vcc +8.5 V) that drives the N-CH MOS FET gate is employed.

- Protection from Excess Input Voltage
  VOLTAGE DETECT (IC18) monitors the input +12 V. If the voltage exceeds approximately +18 V, the output of the IC18-1 is set to “H”. This is input to IC1 to start the protection from the excess voltage and turn on the +12 V output. (SHUT DOWN)
  Since this function is a latch operation, the main power of the unit needs to be turned off once and back on after the input power is set to below 18 V.

- Excess current detection
  The output circuit of the UNREG +12 V has excess current detection resistors R70, R71 and R72. A voltage drop at the resistors is detected by the IC5.
  When the voltage drop at the resistors exceeds 200 mV, the +12 V output is turned off.(SHUT DOWN)
  Another SHUT DOWN signal is the H SHUT DOWN signal that is supplied from the RE-246 board. If any one of the DC-DC converter outputs is shorted, the output 12 V enters the SHUT DOWN state except UN SW +12 V. (SHUT DOWN)
  Since this function is a latch operation, the main power of the unit needs to be turned off once and back on after the cause of the excess current is removed.

- Protection against input power connection of reverse polarity
  If the input power is connected in reverse polarity, FET (Q2) is turned off so that the GND lines of the control system circuits are disconnected. Thus the control circuits are protected and supply of +12 V power to the respective circuits is stopped.

- FAN voltage control
  The Q13 and Q14 are controlled by the FAN CONT signal from the AT-177 board and the PWM wave is converted to the DC voltage according to the DUTY. The voltage controls the FAN and reduces the temperature increase.

- Audio Circuit
  This is the output circuit for the AUDIO OUT (rear connector). The signal is output by selecting the CH1/2 or CH3/4 in the MONITOR.

- ±4.8 regulator circuit
  This is the voltage regulator for AUDIO using on the AXM-38 board.

1-2-10. LCD System

PD-118 board

The PD-118 board consists of the color LCD panel drive circuit and the power supply circuit for LCD backlight.
IC1 is the color LCD panel drive IC that contains of the built-in video signal RGB driver, the timing generator, and the VCO.
IC1 also contains the serial interface circuit and electronic potentiometers that are used to establish the various setups in accordance with the commands from the microprocessor (IC921) of the FP-157 board.
The RGB video signals that are input to IC1 pin-37 through pin-39 receive contrast adjustment and brightness adjustment. Then, they pass through the output signal polarity inversion circuit and are output from IC1 pin-20 through pin-22.
The factory adjustment data is stored in the IC3 EEPROM.
The respective timing signals for driving the LCD panel are generated from the sync signals that are input to IC1 pin-41 and pin-42.
The operations such as turning off the backlight and inverting the video signal left to right or up to down are performed in accordance with the control signals supplied from the microprocessor (IC921) of the FP-157 board.

1-2-11. Others

CN-3005 board

The VF power supply, light power supply, light switch signal, and the EEPROM circuit that stores the rely and system information of the handle switch signal are included.

Handle switch relay

Input and output the handle switch signal (CN2).

Light switch relay

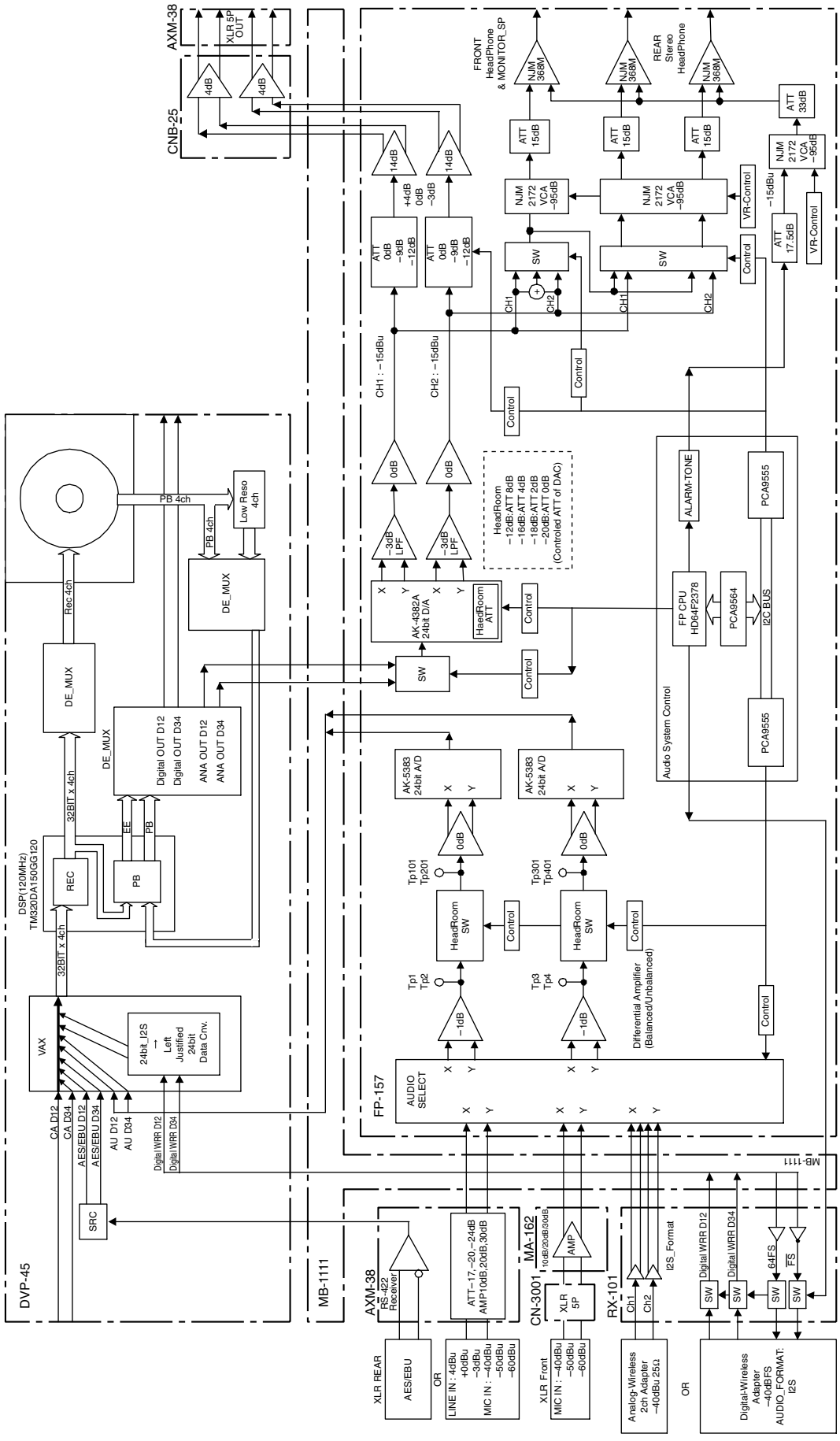
Relays the light switch signal (CN3).

EEPROM

The system information is written to the EEPROM (IC2) by the I2C communication to control.

MS-86 board

The MS-86 board is the connector board for the memory stick connection.
When a memory stick is inserted, the INS signal is set to LOW so that the camera microprocessor checks capacity and types of the memory stick inserted.
VCC is supplied to a memory stick only when a memory stick is inserted or only when accessing a file on a memory stick. When VCC is supplied, the INS_LED and ACTIVE_LED (D1) is turned ON.
Access to the memory stick data is processed in the following order: VCC IN → SCLK ON → BS Pulse → DATA IN/OUT → SCLK OFF → • • → SCLK ON → BS ON → DATA IN/OUT → SCLK OFF → • • → VCC OFF.



Audio Block Overview

1-3. Matching Connectors

Use the following connectors at the ends of the cables when connecting the cables during installation and maintenance, or alternately use the following cables.

Panel indication	Matching connectors/cables
GENLOCK IN TC IN TC OUT TEST OUT SDI IN SDI OUT 1 SDI OUT 2	1-569-370-12 Plug, BNC
AUDIO IN CH1/CH2	1-508-084-00 XLR 3-pin, male
AUDIO OUT	Audio cable (XLR 5 pin-XLR 3-pin, 2 m) CCXA-53 made by Sony or equivalent
DC IN	1-508-362-00 XLR 4-pin, female
DC OUT 12 V	1-566-425-11 round type 4-pin, male
EARPHONE	Mini jack (commercially available on market)
LIGHT	Power tap (OE) Made by ANTONBAUER Inc., 33710 or equivalent
MIC IN	1-508-370-11 XLR 5-pin, male
NETWORK	100 BASE-TX
REMOTE	1-766-848-11 round type 8-pin, male
VF	Connector, 20-pin, male Hirose HR 12-14PA-20PC or equivalent
i.LINK	DV cable (6-pin-4-pin) : CCFD-3L DV cable (6-pin-6-pin) : CCF-3L
WIRELESS RECEIVER IN	WRR-855A, DWR-S01D (by Sony) only connectable **Note** Do not connect with a connector/ cable other than above.

1-4. Signal Inputs and Outputs

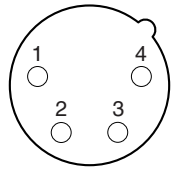
Inputs

GENLOCK IN : BNC type 1.0 V p-p, 75 Ω unbalanced
TC IN : BNC type 0.5 V to 18 V p-p, 10 kΩ
SDI IN (Option) : BNC type

Outputs

TEST OUT : BNC type 1.0 V p-p, 75 Ω unbalanced
SDI OUT : BNC type SDI 0.8 V p-p, 75 Ω, 270 Mbps, 1.5 Gbps
TC OUT : BNC type 1.0 V p-p, 75 Ω
EARPHONE : 8 Ω or more, −∞ to −18 dBu variable

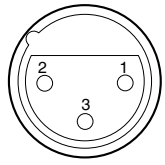
DC IN : XLR, 4-pin (Male)



– EXT VIEW –

No.	Signal	I/O	Specifications
1	GND	–	GND for BATT OUT (+)
2	–		No connection
3	–		No connection
4	BATT OUT (+)	IN	+11 to 17 V dc

AUDIO IN CH-1, CH-2 : XLR, 3-pin (Female)



– EXT VIEW –

(0 dBu = 0.775 V rms)

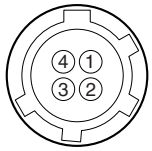
MIC/LINE INPUT

No.	Signal	I/O	Specifications
1	MIC/LINE (G)	–	−60 dBu/+4 dBu, selectable High impedance, Balanced
2	MIC/LINE (X)	IN	
3	MIC/LINE (Y)	IN	

AES/EBU INPUT

No.	Signal	I/O	Specifications
1	AES/EBU (G)	–	1 Vp-p, 110 Ω, Balanced
2	AES/EBU (X)	IN	
3	AES/EBU (Y)	IN	

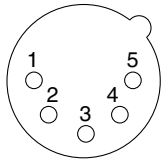
DC OUT 12 V : DIN, 4-pin (Female)



– EXT VIEW –

No.	Signal	I/O	Specifications
1	UNREG GND	–	GND for POWER
2	–		No connection
3	–		No connection
4	UNREG +12 V	OUT	+11 to 17 V dc

AUDIO OUT : XLR, 5-pin (Male)

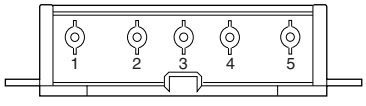


– EXT VIEW –

(0 dBu = 0.775 V rms)

No.	Signal	I/O	Specifications
1	ANALOG GND	–	
2	AUDIO CH-1 (X)	OUT	0 dBm (600 Ω terminated)
3	AUDIO CH-1 (Y)	OUT	
4	AUDIO CH-2 (X)	OUT	
5	AUDIO CH-2 (Y)	OUT	

BATT IN : 5-pin (Male)



– EXT VIEW –

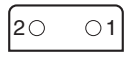
No.	Signal	I/O	Specifications
1	BATT (–)	IN	
2	BATT ID	IN	
3	BATT REM	IN	
4	LIGHT CONT	OUT	
5	BATT (+)	IN	+11 to 17 V dc

LENS : 12-pin (Female)

– EXT VIEW –

No.	Signal	I/O	Specifications
1	RET (SW)	IN	ON : 0 V, OFF : OPEN
2	VTR TRIG	IN	ON : 0 V, OFF : OPEN
3	LENS GND	–	
4	AUTO +5 V	OUT	AUTO : +5 V, MANU : 0 V or OPEN
5	IRIS CONT	OUT	+3.4 V (F16) to +6.2 V (F2.8)
6	UNREG +12 V	OUT	+11 V to 17 V
7	IRIS PSTN	IN	+3.4 V (F16) to +6.2 V (F2.8)
8	REMOTE/LOCAL	OUT	AUTO IRIS : 0 V
			MANUAL IRIS : +5 V
9	EXTENDER	IN	EX 2 ON : 0 V
			EX 0.8 ON : +1.8 V
			OFF : +4.8 V
10	ZOOM PSTN	IN	WIDE : 2 V, TELE : 7 V
11	LENS RX		
12	LENS TX		

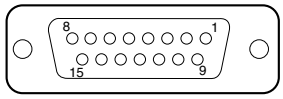
LIGHT : 2-pin (Female)



– EXT VIEW –

No.	Signal	Specifications
1	LIGHT +12 V OUT	50 W MAX
2	GND	

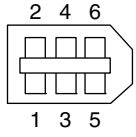
WIRELESS RECEIVER IN : D-sub, 15-pin (Female)



– EXT VIEW –

No.	Signal	I/O	Specifications
1	GND	–	GND for AUDIO IN
2	Audio CH1 IN	IN	WIRELESS RECEIVER AUDIO CH1 IN
3	Audio CH2 IN	IN	WIRELESS RECEIVER AUDIO CH2 IN
4	DC +7 V OUT	OUT	
5	GND	–	
6	SCLK	OUT	64 FS
7	WRR855 DET	I/O	
8	GND	–	
9	WRR CLK	IN	WRR SERIAL CLOCK
10	CS	OUT	WRR SELECT
11	WRR DI	OUT	WRR SERIAL IN
12	WRR DO	IN	WRR SERIAL OUT
13	LRCK	OUT	FS
14	DATA 1/2	IN	AUDIO DATA 1/2 IN
15	DATA 3/4	IN	AUDIO DATA 3/4 IN

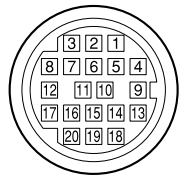
i.LINK : 6-pin



– EXT VIEW –

No.	Signal	I/O	Specifications
1	VP	IN	BUS POWER
2	VG	–	GND
3	NTPB	I/O	STROBE B (–)
4	TPB	I/O	STROBE B (+)
5	NTPA	I/O	DATA A (–)
6	TPA	I/O	DATA A (+)

VF : 20-pin (Female)



– EXT VIEW –

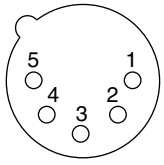
No.	Signal	I/O	Specifications
1	SDA VF	I/O	TTL level
2	–		No connection
3	–		No connection
4	SCL	OUT	TTL level
5	–		No connection
6	–		No connection
7	–		No connection
8	G TALLY	OUT	ON : 5 V, OFF : GND
9	–		No connection
10	–		No connection
11	–		No connection
12	VF VIDEO	OUT	1.0 V p-p, Zo = 75 Ω
13	VF VIDEO GND	–	GND for VIDEO
14	VF VIDEO (Pb)	OUT	±0.35 V p-p, Zo = 75 Ω
15	VF VIDEO (Pr)	OUT	±0.35 V p-p, Zo = 75 Ω
16	–		No connection
17	R TALLY (UP)	OUT	ON : 5 V, OFF : GND
18	–		No connection
19	UNREG GND	–	GND for UNREG
20	UNREG	OUT	+11 V to 17 V

REMOTE : 8-pin (Female)

– EXT VIEW –

No.	Signal	I/O	Specifications
1	TX RCP DATA (X)	OUT	SERIAL DATA OUT
2	TX RCP DATA (Y)	OUT	SERIAL DATA OUT
3	RX RCP DATA (X)	IN	SERIAL DATA IN
4	RX RCP DATA (Y)	IN	SERIAL DATA IN
5	VIDEO (G)	–	GND for VIDEO
6	UNREG +12 V	OUT	+11 V to 17 V
7	UNREG (GND)	–	GND for UNREG
8	VIDEO (X)	OUT	1.0 V p-p, Zo = 75 Ω
	CHASSIS GND	–	CHASSIS GND

MIC IN : XLR, 5-pin (Female)

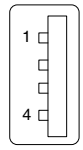


– EXT VIEW –

(0 dBu = 0.775 V rms)

No.	Signal	Specification
1	MIC IN (G)	–50 dBu High impedance balance
2	MIC1 IN (X)	
3	MIC1 IN (Y)	
4	MIC2 IN (X)	
5	MIC2 IN (Y)	

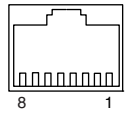
MAINTENANCE



– EXT VIEW –

No.	Signal
1	USB_VBUS
2	USB_D–
3	USB_D+
4	GND

(NETWORK)

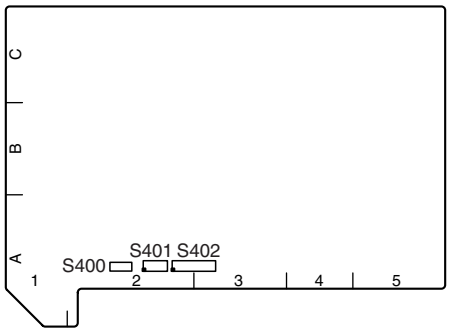


– EXT VIEW –

No.	Signal	I/O	Specifications
1	TX (+)	I/O	Transmitted data (+)
2	TX (–)	I/O	Transmitted data (–)
3	RX (+)	I/O	Received data (+)
4	–	–	No connection
5	–	–	No connection
6	RX (–)	I/O	Received data (–)
7	–	–	No connection
8	–	–	No connection

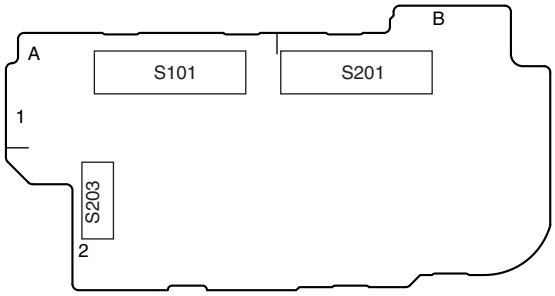
1-5. On-Board Switch and LED Function

AT-177 board



Ref.No.	Bit	Name	Function	Factory setting
S400	–	–	Turns ON/OFF the function to display the TOP menu ON : To display the TOP menu OFF : Not to display the TOP menu	ON
S501	1	–	Factory-use	OFF
	2	–	Factory-use	OFF
	3	–	Factory-use	OFF
	4	–	Factory-use	OFF
S402	1	–	Service mode setting ON : Service mode (The SERVICE menu is displayed) OFF : Normal mode	OFF
	2	–	Disables displaying SERVICE menu by “Method 2” in “4-1-2. How to Display the SERVICE Menu” ON : Disable OFF : Enable	OFF
	3	–	Factory-use	OFF
	4	–	Factory-use	OFF
	5	–	Factory-use	OFF
	6	–	Factory-use	OFF
	7	–	Factory-use	OFF
	8	–	FRAM initialization ON : Initializes the FRAM/AT-177 board OFF : Normal mode	OFF

AXM-38 board



Ref.No.	Name	Function	Factory setting
S101	AUDIO IN (CH1)	LINE/AES/EBU/MIC/(CH1) select switch*	–
S201	AUDIO IN (CH2)	LINE/AES/EBU/MIC/(CH2) select switch*	–
S203	INPUT REFERENCE	Sets the input reference level +4 dB : Sets the input reference level to +4 dB 0 dB : Sets the input reference level to 0 dB –3 dB : Sets the input reference level to –3 dB	+4 dB

* : Refer to the “Operation Manual”.

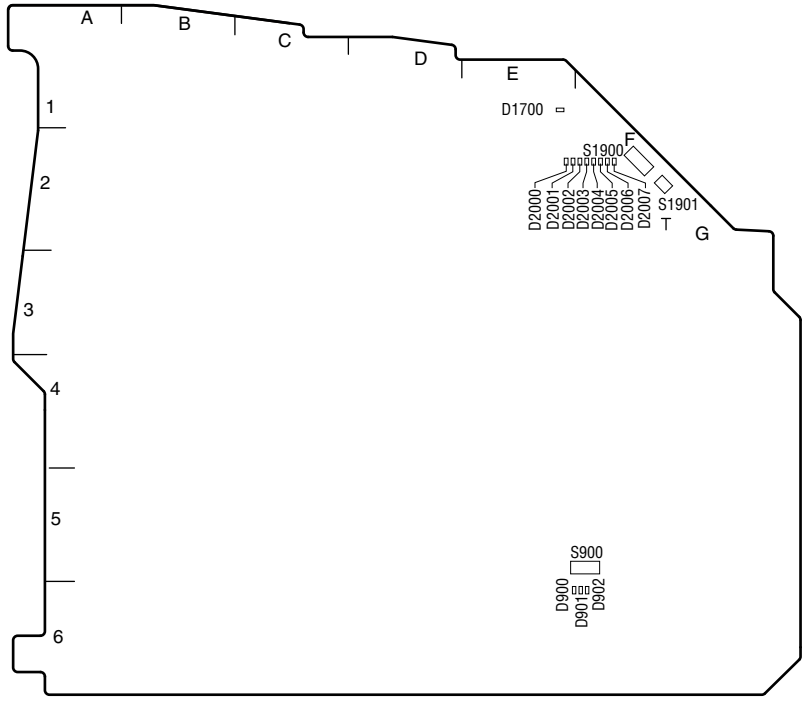
DET-45 board

Ref.No.	Name	Function	Factory setting
S1	SW	Color LCD turn switch	–

DR-606 board

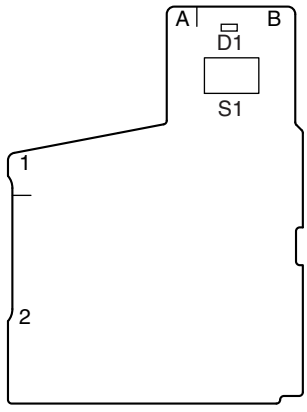
Ref.No.	Name	Function	Factory setting
S600	System reset	Factory-use	–

DVP-45 board



- Each LED is used for adjustment and check in the manufacturing process.
- S900, S1900, and S1901 are used for adjustment and check in the manufacturing process. They are all set to off when shipped from the factory.

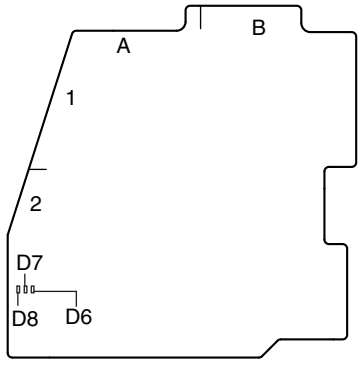
CN-2946 board



Ref.No.	Name	Function	Factory setting
D1	TALLY (Back tally) indicator	Lights during recording when the TALLY switch is turned on*	–
S1	TALLY switch	Turns ON/OFF the TALLY indicator*	ON

* : Refer to the “Operation Manual”.

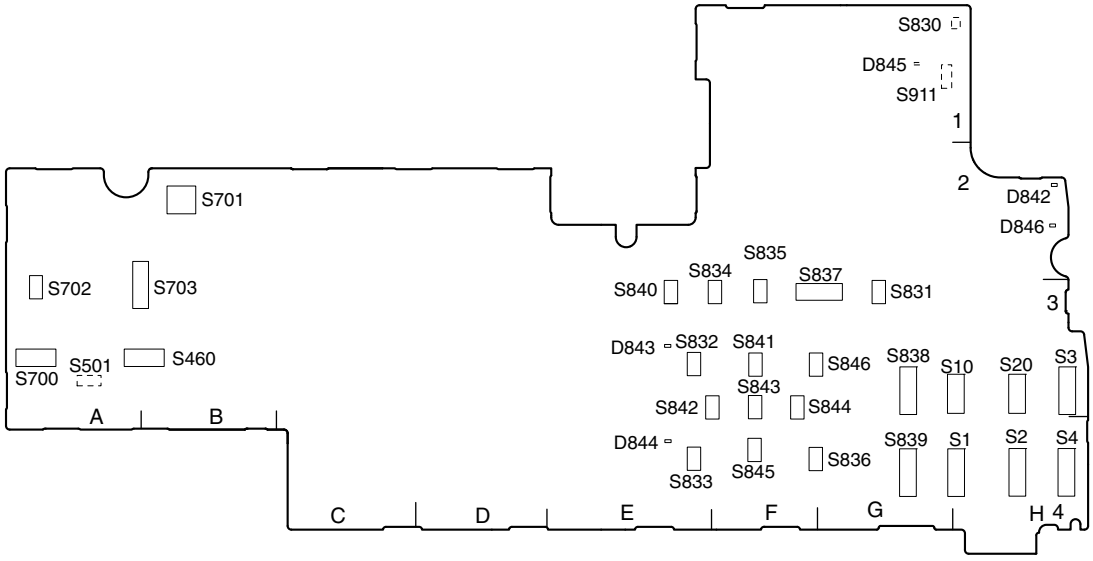
CNB-25 board



Ref.No.	Name	Function	Factory setting
D6	Overvoltage protection indicator	Lights when the overvoltage protection starts to operate when the input voltage of EXT DC or BATT reaches approx. 19.5 V or more. This shuts down the unit*	–
D7	Low voltage protection indicator	Lights when the operation of the low voltage protection circuit of CNB-25 board is repeated several times due to some error. This shuts down the unit*	–
D8	Shut Down signal from RE-246	Lights when the Shut Down signal is sent from the RE-246 board due to a load error of the RE-246 board. This shuts down the unit*	–

* : When the unit is shut down under the condition above this level, the overvoltage protection for the entire unit may start. In this case, the indicator does not light.

FP-157 board

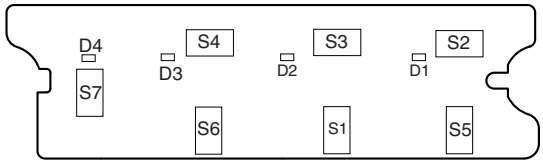


Ref.No.	Bit	Name	Function	Factory setting
D842	–	WARNING	Warning light. Lights when FP-CPU is abnormal*	–
D843	–	THUMBNAIL	Displays thumbnails*	–
D844	–	SUB CLIP	Lights during the clip playback*	–
D845	–	TEST	Lights during the FP-CPU initialization*	–
D846	–	ACCESS	Lights when the disc drive is being accessed*	–
S1	–	CH1	FRONT/REAR/WRR	FRONT
S2	–	CH2		
S3	–	CH3		
S4	–	CH4		
S10	–	AUTO1 (ON:H/OFF:L)	Selects the adjustment method of the audio level for audio channel 1*	–
S20	–	AUTO2 (ON:H/OFF:L)	Selects the adjustment method of the audio level for audio channel 2*	–
S460	–	MONITOR (CH1/2, CH3/4)	Audio monitor select switch*	–
S501	1	NC	–	OFF
	2	NC	–	OFF
	3	NC	–	OFF
	4	–	Turns on when 5P XLR of the AUDIO output of the AXM-38 board is changed to 3P*	OFF
S700	–	ASSIGN2	Turns ON/OFF the assigned function*	OFF
S701	–	CCC–SW	Changes the color temperature*	–
S702	–	ASSIGN1	Allocates the switch functions*	OFF
S703	–	MONITOR (CH-L/MIX/CH-R)	Audio monitor select switch*	–
S830	–	CPU–RESET	Resets the CPU	–
S831	–	BRIGHT*	Brightness adjustment*	–
S832	–	THUMBNAIL/ ESSENCE MARK	Thumbnail*	–

Ref.No.	Bit	Name	Function	Factory setting
S833	–	SUB CLIP	Plays the clip list*	–
S834	–	HOLD/CHAPTER	Displays the display hold/chapter function*	–
S835	–	RESET	Resets the time counter display*	–
S836	–	SHIFT	Shift*	–
S837	–	DISPLAY (CTL/TC/U–BIT)	Switches the counter display* COUNTER : Displays the counter for the elapsed record/playback time TC : Displays time-code U–BIT : Displays user-bit	
S838	–	F–RUN/SET/R–RUN	F–RUN : Continuous time-code steps* SET : Sets the time-code and user-bit R–RUN : Time-code steps while recording	
S839	–	RESET/REGEN/CLOCK	Reset/regenerate/expand button*	
S840	–	DISP SEL/EXPAND	Switches the display contents*	–
S841	–	UP	UP*	–
S842	–	LEFT	LEFT*	–
S843	–	SET/S.SEL	SET*	–
S844	–	RIGHT	RIGHT*	–
S845	–	DOWN	DOWN*	–
S846	–	CLIP MENU	MENU*	–
S891	1	–	Factory-use	OFF
	2	–	Factory-use	OFF
	3	–	Factory-use	OFF
	4	–	Factory-use	OFF

* : Refer to the “Operation Manual”.

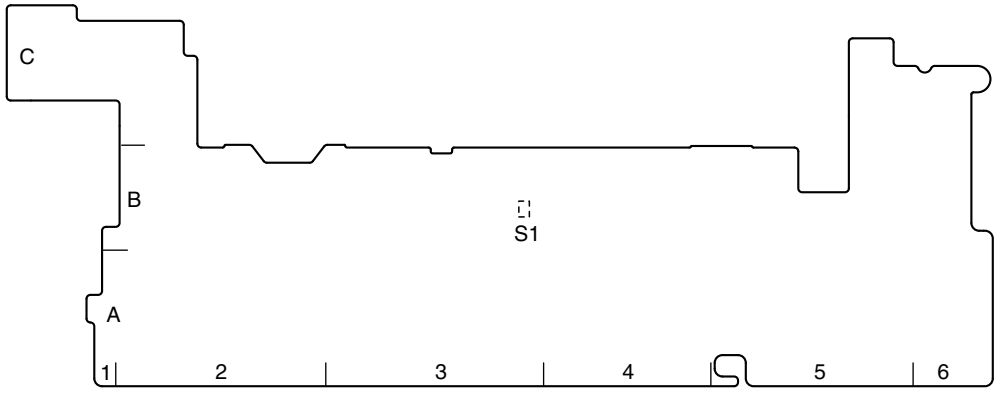
KY-623 board



Ref.No.	Name	Function	Factory setting
D1	FF	Lights during fast-forward playback*	–
D2	PLAY	Lights during playback of the disc*	–
D3	REW	Lights during fast-rewind playback*	–
D4	EJECT	Blinks during disc ejection*	–
S1	STOP	Stops playback*	–
S2	FF	Fast forward*	–
S3	PLAY	Disc playback*	–
S4	REW	Fast rewind*	–
S5	NEXT	Moves to the next clip*	–
S6	PREV	Moves to the previous clip*	–
S7	EJECT	Ejects the disc*	–

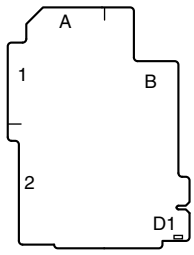
∗ : Refer to the “Operation Manual”.

MB-1111 board



Ref.No.	Bit	Name	Function	Factory setting
S1	0	Normal boot	Starts iTRON-CPU mandatorily in normal mode	OFF
	1	Recovery boot	Starts iTRON-CPU mandatorily in recovery mode	OFF

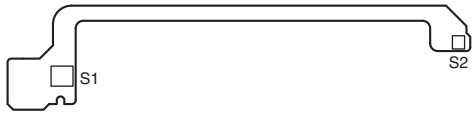
MS-86 board



Ref.No.	Name	Function	Factory setting
D1	MEMORY STICK	Lights when being accessed*	–

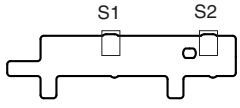
* : Refer to the “Operation Manual”.

SW-1125G board



Ref.No.	Name	Function	Factory setting
S1	IN SENSE	Cartridge presence	OFF
S2	STBY OFF	Cartridge chucking state	OFF

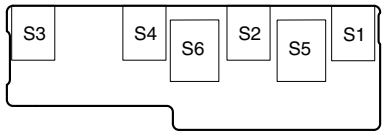
SW-1352 board



Ref.No.	Name	Function	Factory setting
S1	CH1 (ON/OFF)	Turns ON/OFF the +48 V*	OFF
S2	CH2 (ON/OFF)	Turns ON/OFF the +48 V*	OFF

* : Refer to the “Operation Manual”.

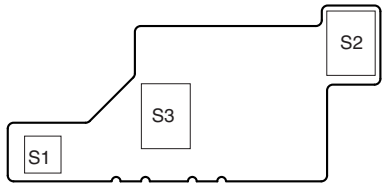
SW-1391 board



Ref.No.	Name	Function	Factory setting
S1	VDR (SAVE/STBY)	Switches the VDR operation state (SAVE/STBY)*	SAVE
S2	GAIN (L/M/H)	Switches gain (L/M/H)*	L=0 dB, M=6 dB, H=12 dB
S3	WHITE BAL (B-A-PRESET/ATW)	Switches the white balance memory PRST : Adjusts the color temperature to the preset value A/B : Calls the saved white balance value ATW : Switches the ATW operations	PRST=3200K
S4	OUTPUT (DCC : ON_OFF/BARS_CAM)	Switches the output signal* Turns on/off the dynamic contrast control* BARS : Outputs the color bar signal* CAM : Turns on/off the DCC function*	–
S5	MENU (ON/OFF)	Turns on/off the MENU switch*	OFF
S6	MENU (ON/OFF)	Turns on/off the MENU switch*	OFF

* : Refer to the “Operation Manual”.

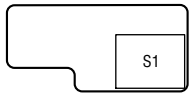
SW-1425 board



Ref.No.	Name	Function	Factory setting
S1	REC START	The button used to start/stop recording*	–
S2	AUTO_W/B_BAL	The switch used to automatically adjust white balance/black balance. Turns on/off the electronic shutter*	–
S3	SHUTTER	Turns on/off the electronic shutter*	–

* : Refer to the “Operation Manual”.

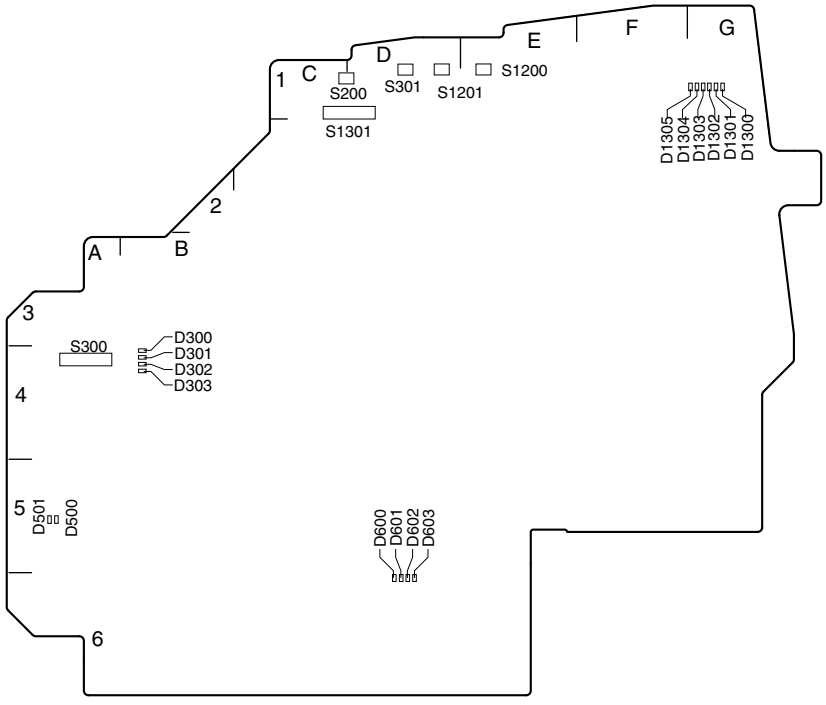
SW-1426 board



Ref.No.	Name	Function	Factory setting
S1	AUTO/MANUAL	AUTO : Lights EXT LIGHT along with the REC operation* MANUAL : Turns ON/OFF EXT LIGHT manually*	–

* : Refer to the “Operation Manual”.

SY-355 board



- Each LED is used for adjustment and check in the manufacturing process.
- S200, S300, S1200, S1201, and S1301 are used for adjustment and check in the manufacturing process. They are all set to off when shipped from the factory

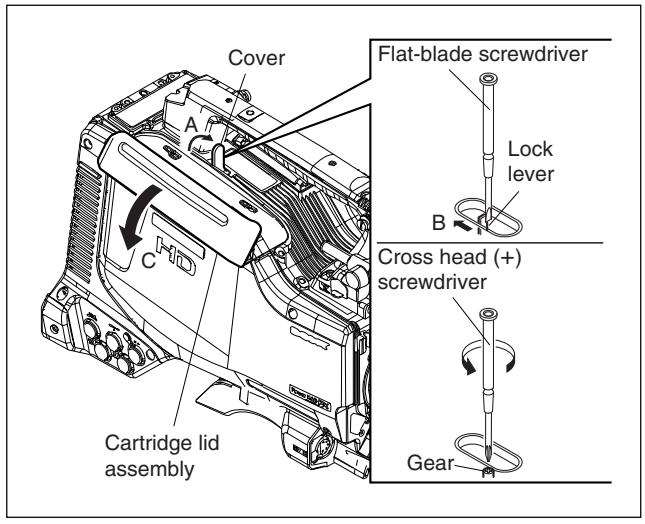
1-6. How to Take Out a Cartridge Manually

1-6-1. Taking Out a Cartridge at Power-off

1. Open the cover in the direction of the arrow A.
2. Push the lock lever in the direction of the arrow B with a screwdriver. The cartridge lid assembly is opened in the direction of the arrow C.
3. Rotate the gear counterclockwise with a crosshead screwdriver to eject the cartridge.
   If a cartridge cannot be taken out, turn the gear clockwise until it will go and then turn it counterclockwise again.

Notes

- Turn the gear slowly and gently. Be careful not to force the gear past their stopping points.
- Be sure not to touch or forcibly take out the cartridge until it is completely ejected.
- Even when the cartridge cannot be ejected with this procedure, do not rotate the gear with an excessive force. This error may be caused by a problem in the loader assembly.
  In this case, refer to Section 1-6-2.

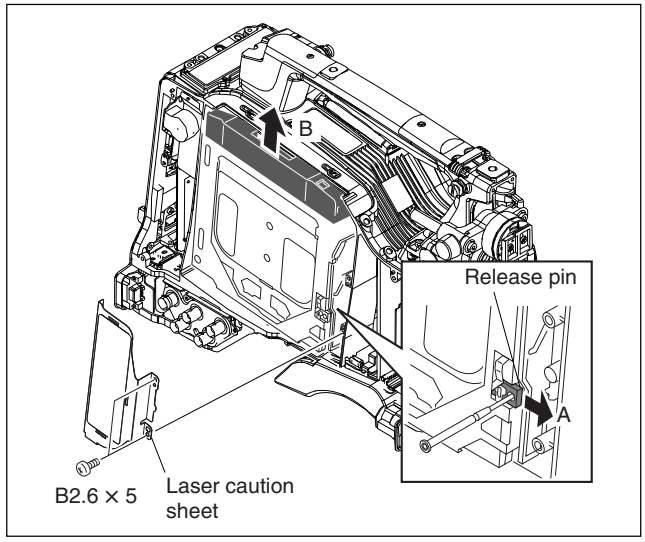


1-6-2. When You Cannot Take Out a Cartridge Even If Pressing the EJECT Button at Power-on

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the four screws and remove the laser caution sheet.
3. Push the release pin in the direction arrow A, and pull out the cartridge from the unit in the direction of the arrow B.

Note

Be careful not to touch the disc surface in the cartridge.



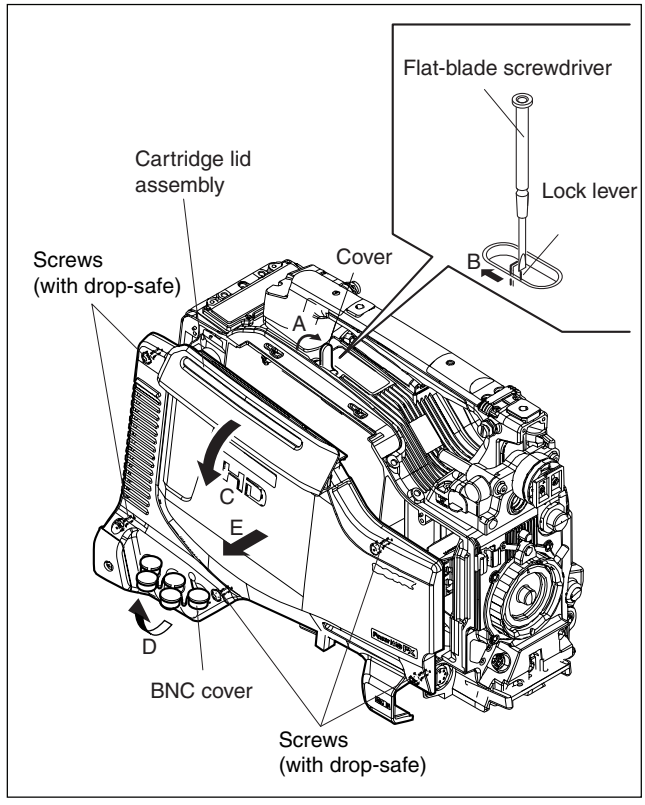
1-7. Removing/Installing

1-7-1. Removing Outside Panel

1. Open the cover in the direction of the arrow A.
2. Push the lock lever in the direction of the arrow B with a screwdriver. The cartridge lid assembly is opened in the direction of the arrow C.
3. Open the BNC cover in the direction of the arrow D.
4. Fully loosen the five screws (with drop-safe) of the outside panel, and remove the outside panel in the direction of the arrow E.

   Note

   Close the cover securely after use.



1-7-2. Reinstalling Outside Panel

1. Reinstall the outside panel to the unit with its cartridge lid assembly opened, by tightening the five screws.

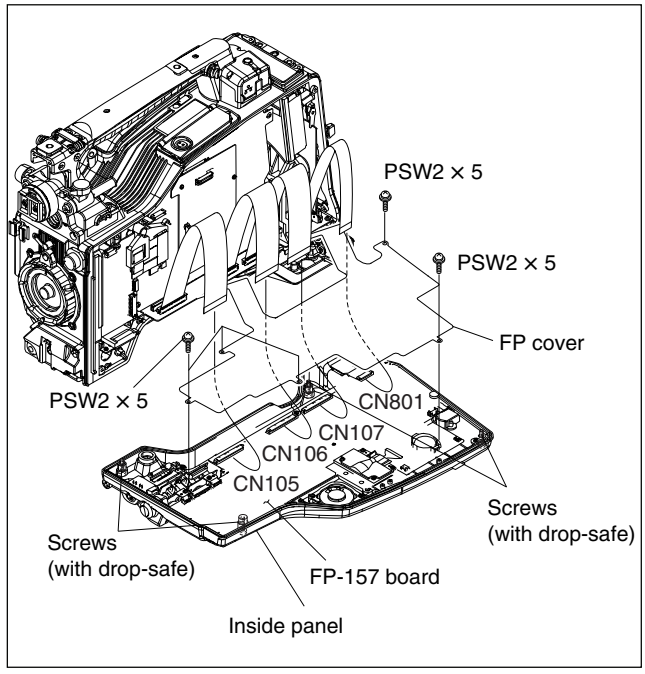
   Note

   Do not tighten the screws with the cartridge inside. Be sure to take out the cartridge before installing the outside panel. (Refer to Section 1-6.)

2. Close the cartridge lid assembly.
3. Close the BNC cover.

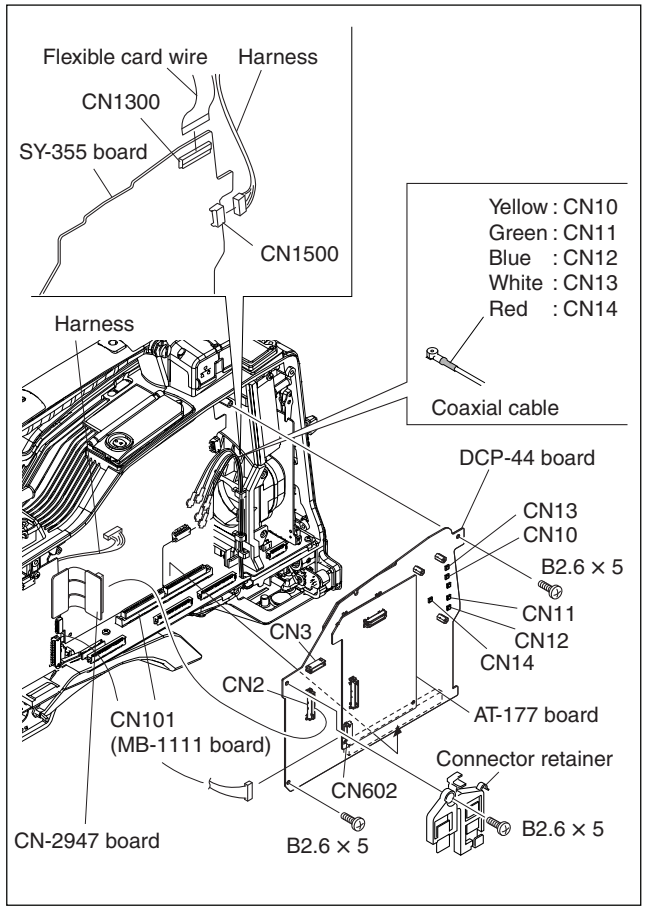
1-7-3. Inside Panel

1. Fully loosen the four screws (with drop-safe) of the inside panel, and open the inside panel.
2. Disconnect the flexible card wires from the four connectors (CN105, CN106, CN107, CN801) on the FP-157 board.
3. Remove the five screws of the FP cover, and remove the inside panel.



1-7-4. Handle Assembly

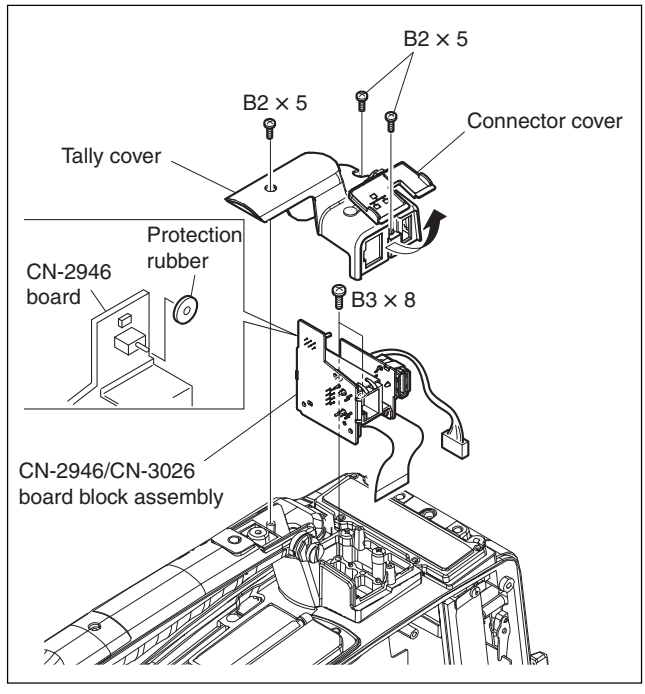
1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the screw (B2.6 × 5) , and remove the connector retainer.
3. Disconnect the CN-2947 board from the connector (CN2) on the DCP-44 board.
4. Remove the two screws (B2.6 × 5) .
5. Disconnect the coaxial cables from the five coaxial connectors (CN10, CN11, CN12, CN13, CN14) on the DCP-44 board.
6. Disconnect the harness from the connector (CN3) on the DCP-44 board.
7. Disconnect the harness from the connector (CN602) on the AT-177 board.
8. Disconnect the DCP-44 board (The AT-177 board is included.) from the connector on the MB-1111 board.
9. Disconnect the flexible card wire from the connector (CN1300) on the SY-355 board.
10. Disconnect the harness form the connector (CN1500) on the SY-355 board.



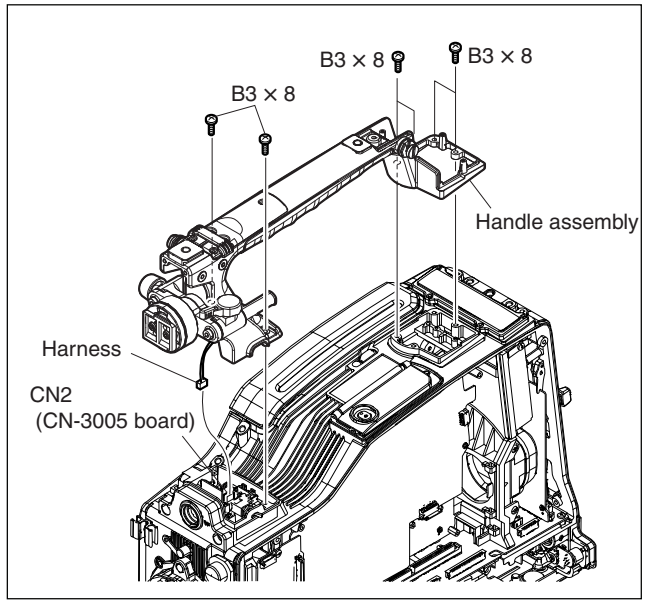
11. Open the connector cover.
12. Remove the three screws (B2 × 5) , and remove the tally cover.
13. Remove the two screws (B3 × 8) , and remove the CN-2946/CN-3026 boards block assembly.

Note

Be careful not to lose drop protection on the CN-2946 board, since it is not fixed.



14. Remove the six screws (B3 × 8) .
15. Disconnect the harness from the connector (CN2) on the CN-3005 board while slightly lifting up the handle assembly, and remove the handle assembly.



1-7-5. Front Panel

1 Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the screw, and remove the connector retainer.
4. Disconnect the CN-2947 board from the connector (CN3) on the TG-260 board.

Note

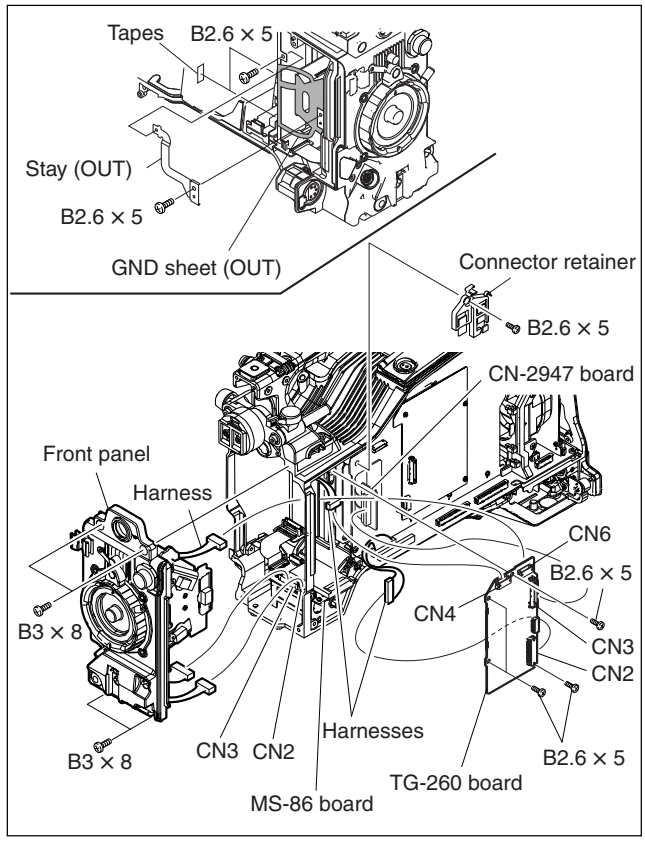
The CN-2947 board is fragile and can be easily broken. Handle it with care.

5. Disconnect the harnesses from the three connectors (CN2, CN4, CN6) of the TG-260 board.
6. Remove the four screws (B2.6 × 5) , and remove the TG-260 board.
7. Remove the two screws, and remove the stay (OUT).
8. Remove the tape, and peel the GND sheet (OUT) from the main frame.

Note

The GND sheet can be broken during removal. Handle it with care.

9. Remove the four screws (B3 × 8) .
10. Take off the front panel, disconnect the harness from the two connectors (CN2, CN3) on the MS-86 board, and remove the front panel.

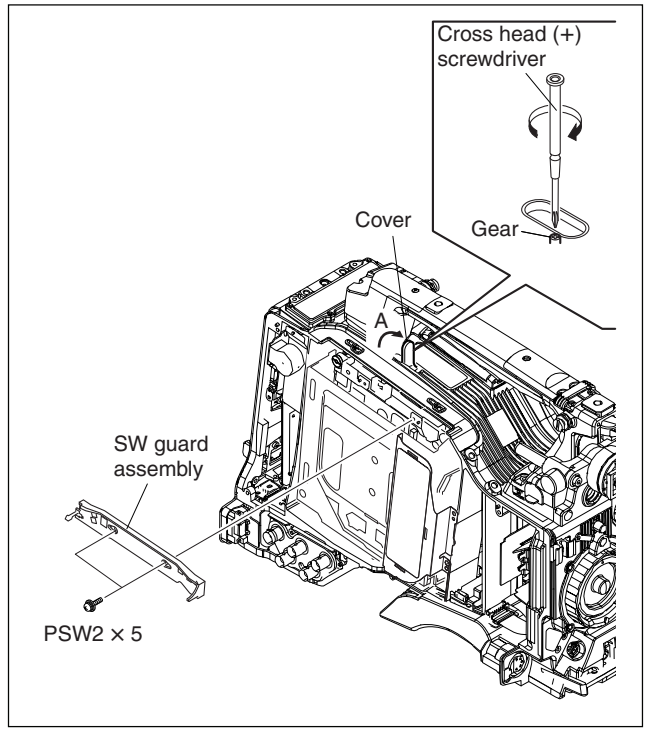


1-7-6. SW Guard Assembly

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the two screws to remove the SW guard assembly.

Note

If the loader has already been moved to the up position, the SW guard assembly may be difficult to remove in some cases. Move down the loader by rotating the gear in clockwise direction with crosshead screwdriver.

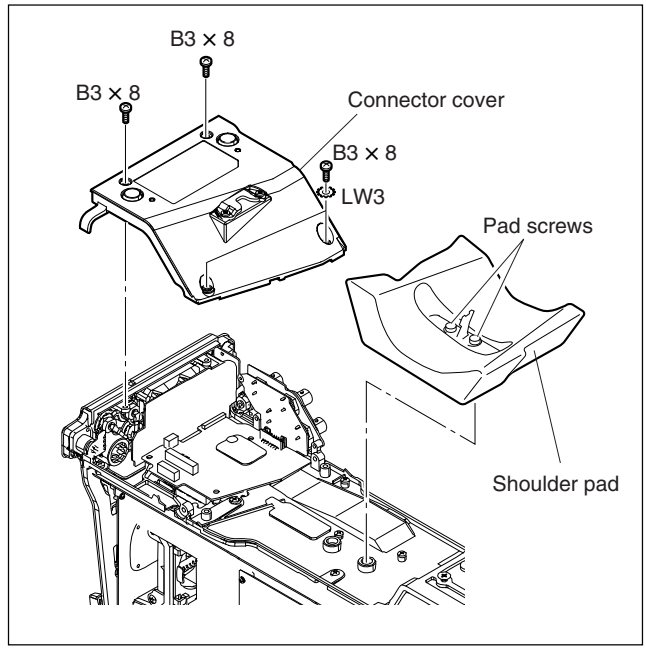


Installation

Install the removed parts by reversing steps 1 to 2 of removal.

1-7-7. Shoulder Pad, Connector Cover

1. Loosen the two pad screws, and remove the shoulder pad.
2. Remove the four screws, and remove the connector cover.

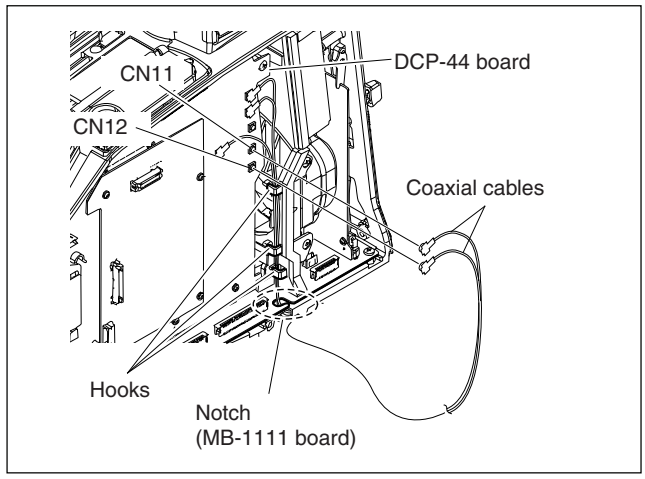


Note on installation:

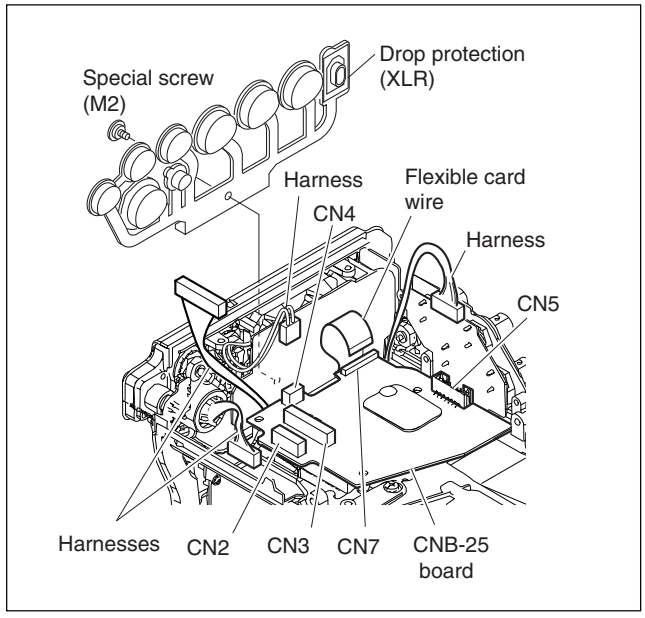
After the shoulder pad is reinstalled, check the slide operation. Check that it slides smoothly with the screws fastened.

1-7-8. Connector Panel Assembly

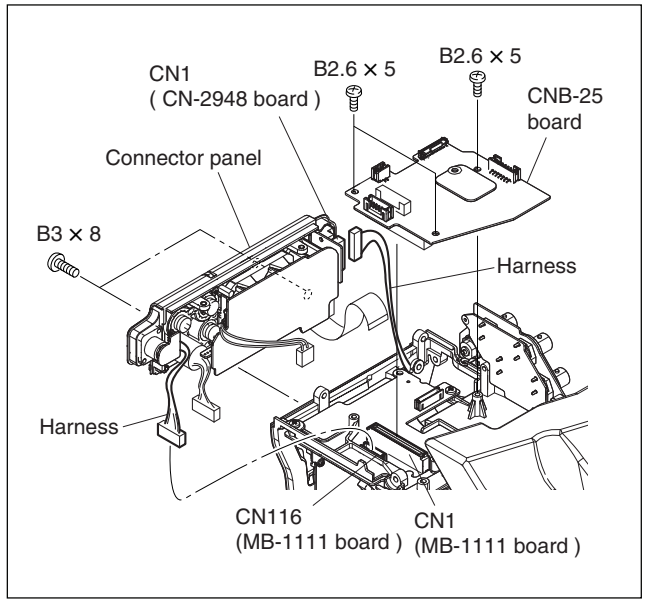
1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Disconnect the coaxial cables from the two coaxial connectors (CN11, CN12) on the DCP-44 board, and detach the cables from the three hooks and the notch on the MB-1111 board.



5. Remove the special screw (M2), and remove the drop protection (XLR).
6. Disconnect the harnesses from the four connectors (CN2, CN3, CN4, CN5) on the CNB-25 board.
7. Disconnect the flexible card wire from the connector (CN7) on the CNB-25 board.

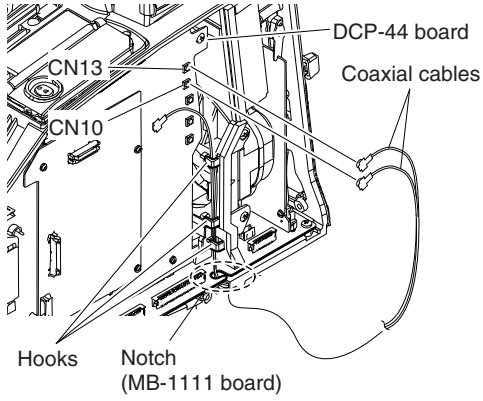


8. Remove the three screws (B2.6 × 5) , and disconnect the CNB-25 board from the connector (CN1) on the MB-1111 board.
9. Disconnect the harness from the connector (CN116) on the MB-1111 board.
10. Disconnect the harness from the connector (CN1) on the CN-2948 board.
11. Remove the two screws (B3 × 8) , and remove the connector panel assembly.

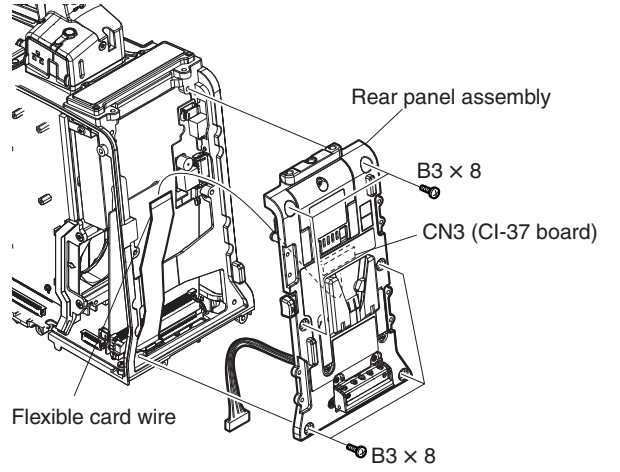


1-7-9. Rear Panel Assembly

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Remove the connector panel assembly. (Refer to Section 1-7-8.)
5. Disconnect the coaxial cables from the two coaxial connectors (CN10, CN13) on the DCP-44 board, and detach the cables from the three hooks and the notch on the MB-1111 board.



6. Disconnect the flexible card wire from the connector (CN3) on the CI-37 board.
7. Remove the six screws (B3 × 8) , and remove the rear panel assembly.

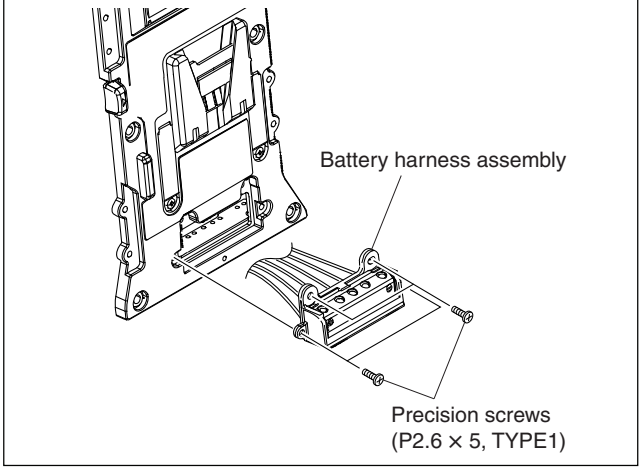


1-7-10. Battery Connector

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Remove the connector panel assembly. (Refer to Section 1-7-8.)
5. Remove the rear panel assembly. (Refer to Section 1-7-9.)
6. Remove the four precision screws (B2.6 × 5), and remove the battery harness assembly.

Note

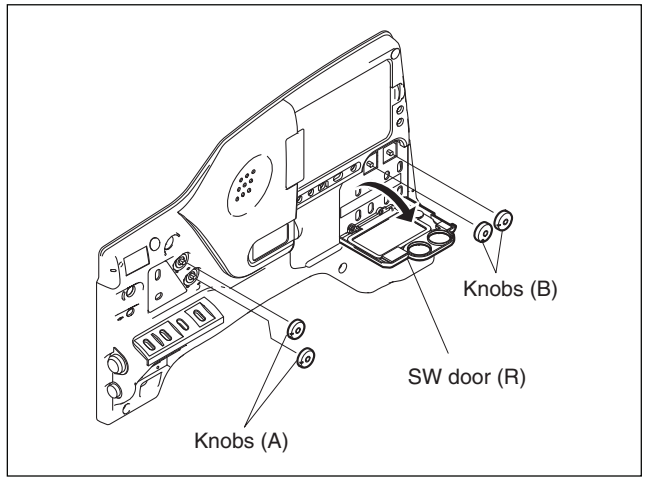
Be careful that the harness should not be caught or damaged by any other part.



1-8. Removing/Installing LCD Block

1-8-1. LCD Block

1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the two knobs (A).
3. Open the SW door (R) , and remove the two knobs (B) .

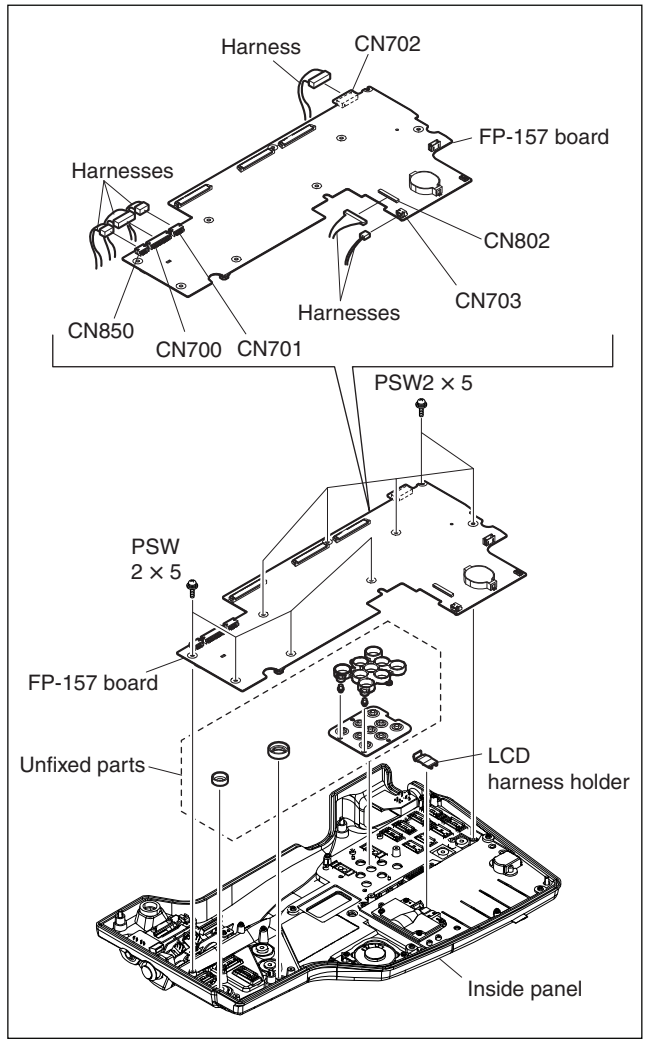


4. Remove the LCD harness holder.
5. Disconnect the harness from the six connectors (CN700, CN701, CN702, CN703, CN802, CN850) on the FP-157 board.
6. Remove the nine screws (PSW2 × 5) , and remove the FP-157 board.

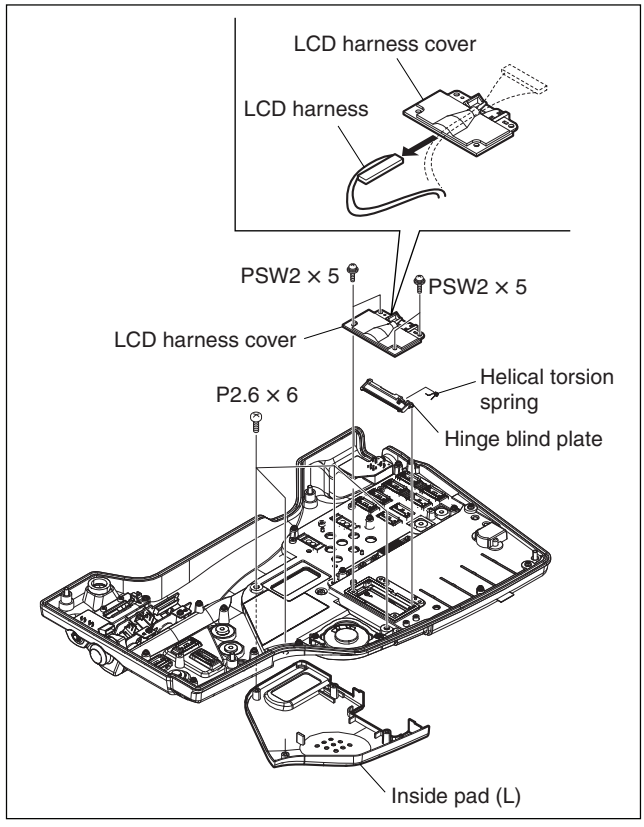
   Note

   After removing the FP-157 board, be careful not to drop the unfixed parts.

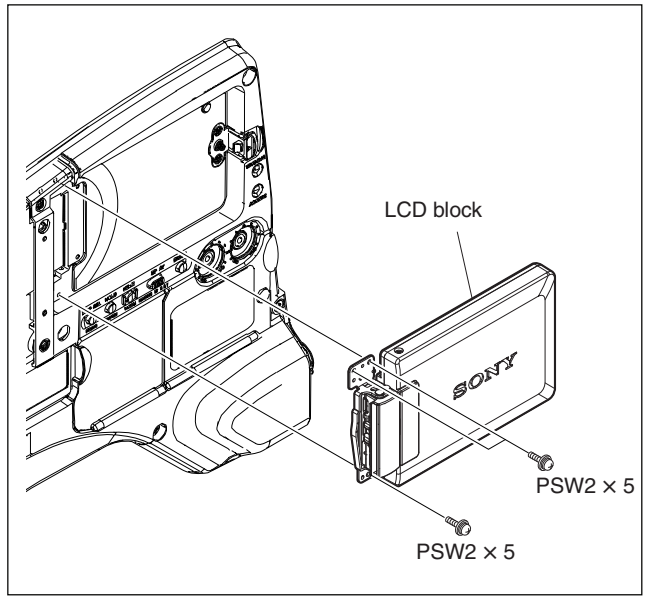
7. Remove the unfixed parts.



8. Remove the four screws (PSW2 × 5) , remove the LCD harness cover.
9. Remove the LCD harness through the hole of the harness cover.
10. Remove the hinge blind plate and helical torsion spring.
11. Remove the four screws (P2.6 × 6) , remove the inside pad (L).

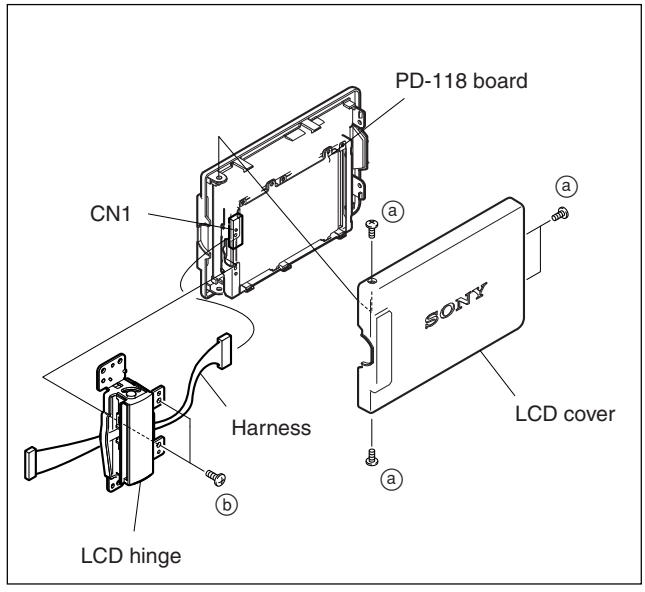


12. Remove the three screws (PSW2 × 5) , remove the LCD block.

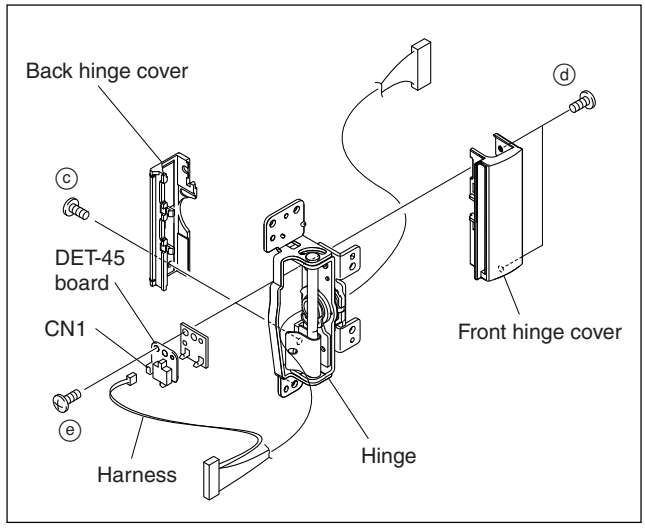


1-8-2. LCD Hinge

1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the LCD block. (Refer to Section 1-8-1.)
3. Remove the four screws of ⓐ (M2 × 4) , and remove the LCD cover.
4. Remove the two screws of ⓑ (M2 × 4) .
5. Disconnect the harness from the connector (CN1) on the PD-118 board, and remove the LCD hinge.

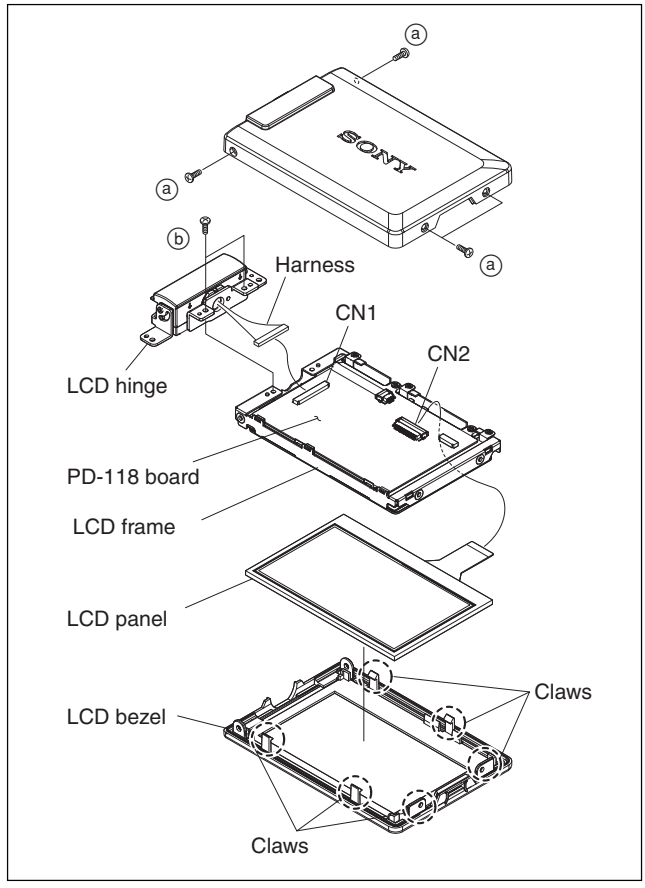


6. Remove the screw of ⓒ (M1.7 × 2.5) of the back hinge cover, and remove the back hinge cover.
7. Turn the hinge and remove the two screws of ⓓ (M1.7 × 2.5) , then remove the front hinge cover.
8. Disconnect the harness from the connector (CN1) on the DET-45 board.
9. Remove the screw of ⓐ (M1.7 × 2.5) , and remove the DET-45 board.

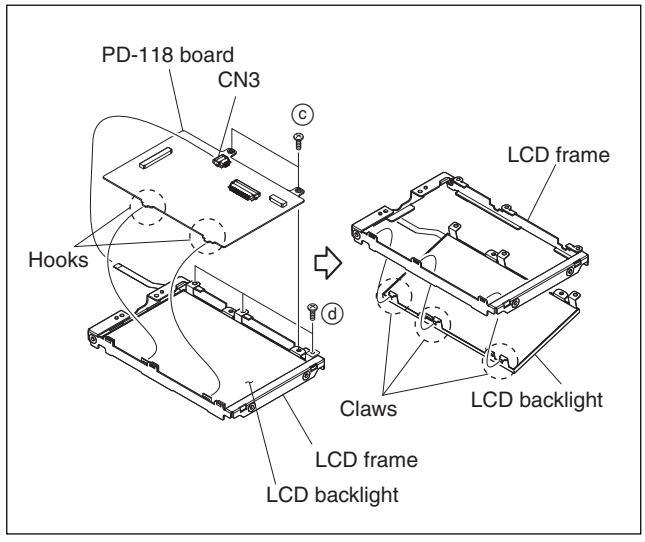


1-8-3. LCD Backlight and LCD Panel

1. Remove the LCD block. (Refer to Section 1-8-1.)
2. Remove the four screws ⓐ (M2 × 3) , and remove the LCD cover.
3. Remove the two screws ⓑ (M2 × 3) .
4. Disconnect the harness from the connector (CN1) on the PD-118 board, and remove the LCD hinge.
5. Disconnect the flexible card wire of the LCD panel from the connector on the PD-118 board.
6. Release the six claws on the LCD bezel to remove the LCD frame.
7. Remove the LCD panel from the LCD bezel.



8. Disconnect the flexible card wire of the LCD backlight from the connector (CN3) on the PD-118 board.
9. Remove the two screws ⓒ (M2 × 3) .
10. Release the hooks on the PD-118 board from the LCD backlight to remove the PD-118 board.
11. Remove the three screws ⓓ (M1.7 × 2.5) .
12. Release the claws on the LCD backlight from the LCD frame to remove the LCD backlight.



1-9. Replacing the Flat Cables, Flexible Card Wires/Boards

Note

The flat cables, flexible card wires and boards are used to connect between the following boards. Life of flexible card wire will be significantly shortened if it is folded. Be very careful not to fold the flat cables, flexible card wires and boards.

The six types of different shape connectors are used in this unit.

Because the direction of the flat cables, flexible card wires and boards are different depending on the shape of the connector, be careful when connecting the flat cables, flexible card wires and boards.

Disconnecting

1. Turn off the power.
2. Slide or lift up the portion A in the direction of the arrow to unlock and pull out the flexible card wire.

Connecting

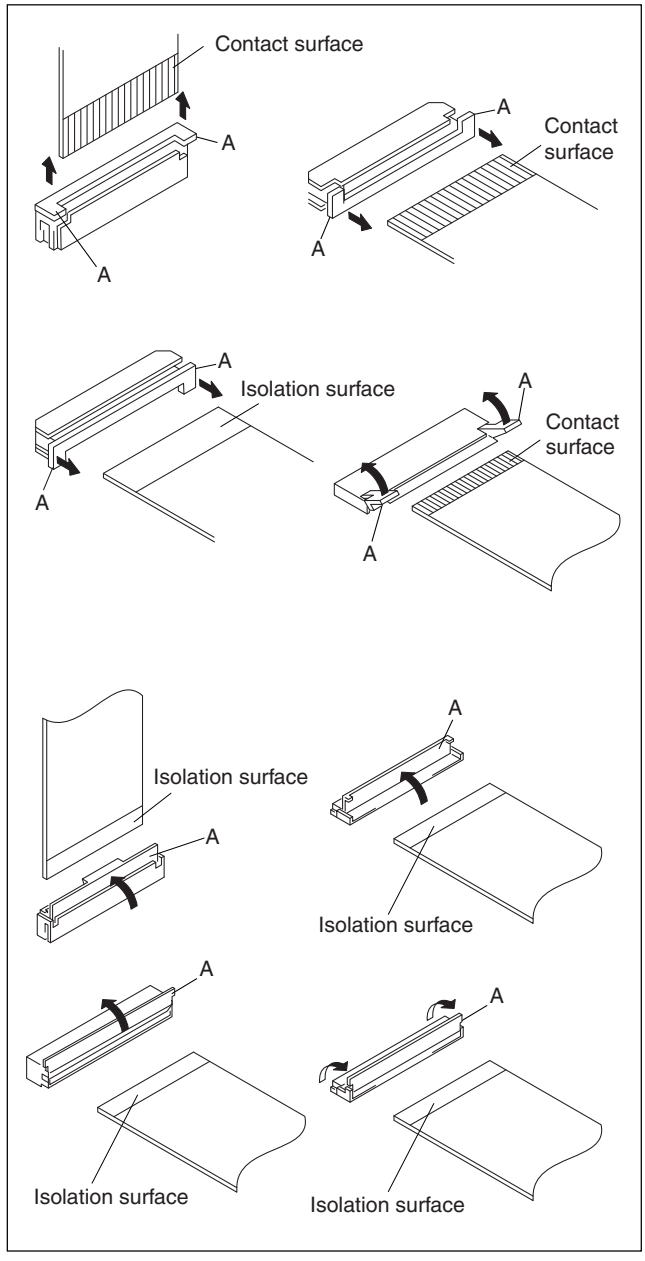
Notes

- Do not insert the flexible card wire sideways.
- Confirm that there is no stain or dust on the contact surface of the flexible card wire.

1. Slide or lift up the portion A in the direction of the arrow and securely insert the flexible card wire into the deep end of the connector.
2. Return the portion A to its original position and lock the connector.

Note

When connecting the flexible card wire, check the connector shape, and great care should be taken for the direction of the contact surface or isolation surface (blue).

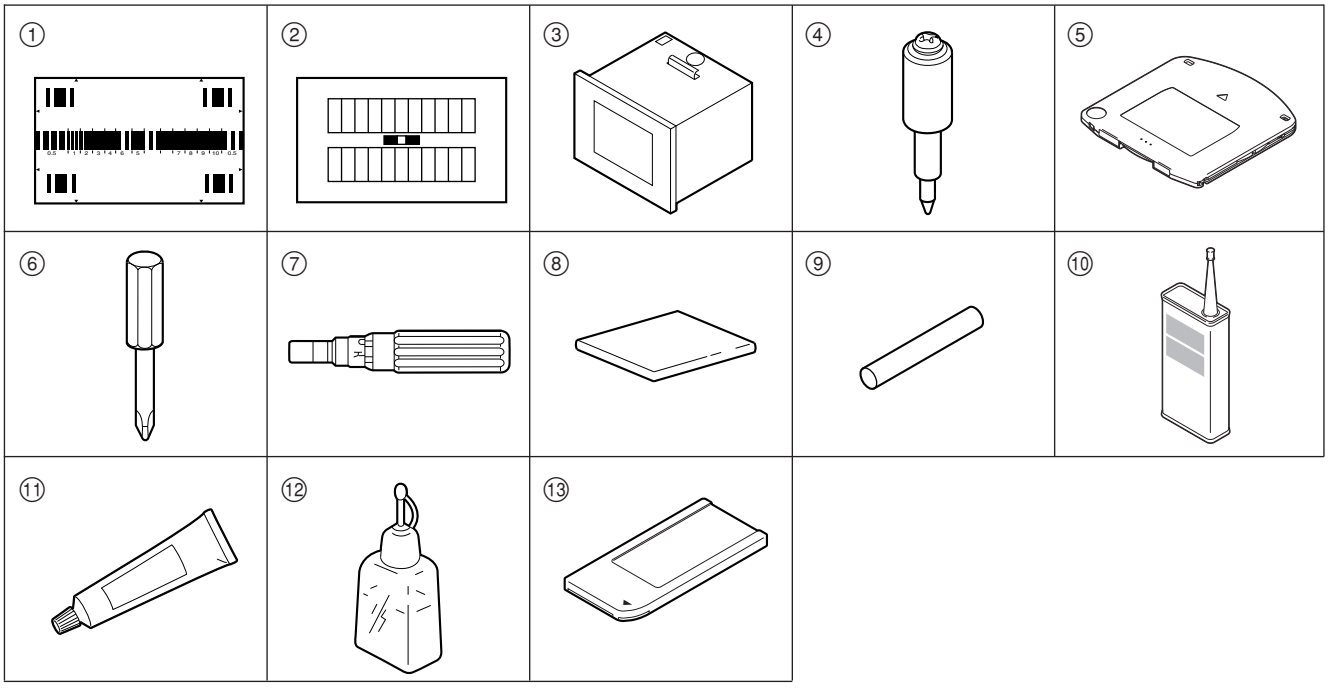


1-10. Service Tools/Measuring Equipment List

1-10-1. Service Tools

The tools and fixtures used in this unit are as follows.

Part No.		Name	Usage/Note
①	J-6026-110-A	Multiburst chart	Camera adjustment
②	Commercially available	Grayscale chart	Reflective type (4 : 3, 16 : 9), Camera adjustment on market
	J-6026-130-B		Transparent type (4 : 3), Camera adjustment
	J-6394-080-A		Transparent type (16 : 9), Camera adjustment
③	J-6029-140-B	Pattern box PTB-500	Camera adjustment
④	J-6323-530-A	Stop washer fastening tool	Stop washer installation
⑤	J-6570-130-A	Alignment disc (PFD23A-RS)	Servo adjustment and Skew adjustment
⑥	J-6325-110-A	Bit for torque driver (M1.4)	For tightening screw
	J-6325-380-A	Bit for torque driver (M2)	For tightening screw
	J-6323-430-A	Bit for torque driver (M3)	For tightening screw
⑦	J-6325-400-A	Torque driver (3 kg•cm)(0.3N•m)	For tightening screw
	J-6252-510-A	Torque driver (6 kg•cm)(0.6N•m)	For tightening screw
	J-6252-520-A	Torque driver (10 kg•cm)(1.0N•m)	For tightening screw
⑧	3-184-527-01	Cleaning cloth	For cleaning
⑨	3-703-358-08	Parallel pin (2 × 20)	For gear replacement, two pins required
⑩	7-432-114-11	Locking compound	For preventing screw from being loosened
⑪	7-600-000-48	Sony bond (SC608LVZ-180ML)	For bonding
⑫	9-919-573-01	Cleaning liquid	For cleaning
⑬	Commercially available on market	Memory Stick	Saving data (Up to 4.0 GB)
–	Commercially available on market	Flat-blade screwdriver (2.3 mm)	Skew adjustment
–	Commercially available on market	Weight (50 to 100 g)	Servo adjustment and Skew adjustment



1-10-2. Measuring Equipment

Use the calibrated equipment or equivalent as listed below for the adjustments.

Equipment	Model name
AC adaptor	Sony AC-DN10
Viewfinder	Sony HDVF-20A
Disc	Sony professional disc PFD23A-RS
Oscilloscope	Tektronix TDS3054 or equivalent (150 MHz or more)
HD waveform monitor	LEADER ELECTRONICS CORP.LV5152DA or equivalent
SD waveform monitor	Tektronix 1755A or equivalent
Frequency counter	Advantest TR5821AK or equivalent
Digital voltmeter	Advantest TR6845 or equivalent
Color monitor	Sony HDM-20E1U/14E1U/14E5U or equivalent
Signal generator	Tektronix SG-5010/TG-2000 or equivalent
Luminance meter	Konica Minolta LS-110 or equivalent
Luxmeter	Konica Minolta T-10 or equivalent
Regulated power supply	(Output current: More than 10 A)
Audio level-meter	Tektronix AM700 or Audio Precision System Two Cascade Plus 2722 or equivalent

1-11. Firmware/Software

1-11-1. EEPROM/FRAM List

Board name	Ref. No.	Type	Saving data	Action to be taken when replacing
AT-177	IC308	FRAM	All setting values of the menu, ABB/AWB adjustment data	Replacement not required
CN-3005	IC2	EEPROM	Model name, Serial No., Model code, MAC address	Required Refer to "7-8-3. CN-3005 Board".
DCP-44	IC8	EEPROM	Backup data of the CN-3005 board, DCP board adjustment value in the production factory	Replacement not required
SY-355	IC300	EEPROM	∗1	Not required
	IC507	FRAM	∗2	Not required
FP-157	IC913	EEPROM	Audio A/D adjustment DSP multiplication value, Audio D/A adjustment DSP multiplication value, Power voltage calibration value, SIDE VOLUME adjustment value	Required Refer to "7-8-6. FP-157 Board".
SE-857	IC4	EEPROM	Adjustment data, digital hours meter data	Required Refer to "8-2-3. Adjustment After Replacing the SE-857 Board".
DR-617	IC20	EEPROM	Backup data for the CN-2947 board, PA board adjustment value in the production factory, CCD block specific data	Replacement not required
PD-118	IC3	EEPROM	PD-118 board adjustment value in the production factory	Required

∗1 : Hours Meter, Operation Hours (Back Up)
Serial No. Model ID (same as the data saved in EEPROM on the CN-3005 board)
Network setting (same as the data saved in FRAM on the AT-177 board)

∗2 : Hours Meter, Operation Hours, System Information (same as the data saved in FRAM on the AT-177 board)
GUI relevant data, NRT Metadata relevant data, Error Log, Salvage information

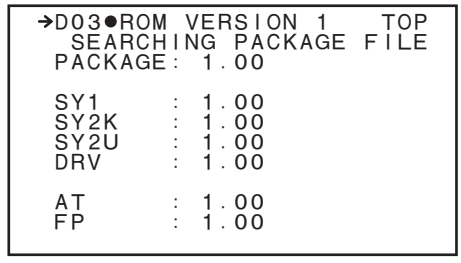
1-11-2. Firmware Update Using the USB Memory

When the firmware update is performed, all types of firmware are updated.
There are two methods of upgrading the firmware. One is the method by using the USB memory and the other is the method by accessing the XDCAM website. This section describes the method by using the USB memory.
For the method of accessing the XDCAM website, refer to "2-4-1. Software Update".
For the method of upgrading by using the USB memory, the USB memory*1 in which the firmware package file of the latest version is saved is required.
For the firmware package file, please contact your local Sony Sales Office/Service Center.

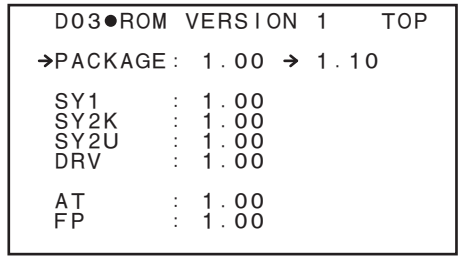
Notes

- ∗1: A general USB memory used for PCs can be used. But when the USB memory is connected to the USB connector, if the screen shows "Unknown USB", or the message screen shows "NO USB MEMORY" during the update, the connected USB memory may have a problem or it may be misrecognized as an unsupported device. In such a case, connect another USB memory and try again.
- It takes about 20 minutes to complete the update.
- When the USB memory*1 is removed during the update, the USB memory*1 may be damaged. Make sure not to remove the USB memory*1 during the update.
- Do not turn off the power during the update.
- When a disc is inserted, eject it.
- Set the VDR SW in the inside panel to "STBY".
- If the update fails while the LABY update is in progress, picture and character may not be displayed in some cases. In such case, repeat update by following the procedure described below.
  1. If a memory stick is inserted, remove it and insert a USB memory*1 that contains the package file (extension: pkg) in its root directory.
  2. While pressing the REC START button and the MENU knob at the same time, turn ON the power.
  3. Wait approximately 30 seconds after power-on. Then, the tally changes from the flashing at 4 Hz to the flashing at 1 Hz. (Flashing indicates that update is in progress.) It takes approximately 20 minutes until the update is complete.
  4. The tally changes from flashing to lighting. (It indicates that update is complete.)
  5. Turn OFF the power and reboot the Camcorder. It boots up with new version.

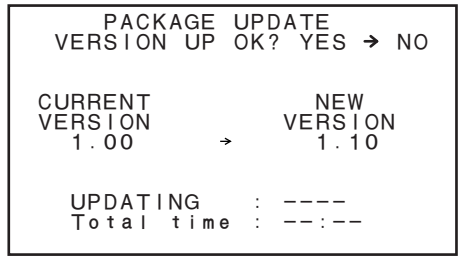
1. Copy the firmware package file (extension: pkg) to the USB memory*1 of the root and plug it into the USB connector of the unit.
2. Move the arrow to the DIAGNOSIS category page named "ROM VERSION 1", and press and hold the MENU knob.
   "SEARCHING PACKAGE FILE" blinks about 10 seconds.



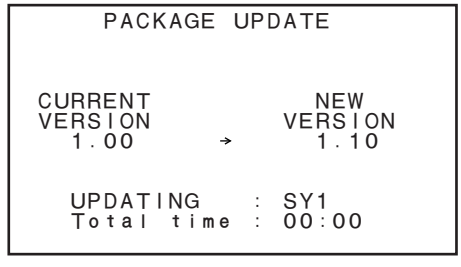
3. When the firmware package file exists in the root, the following display appears.



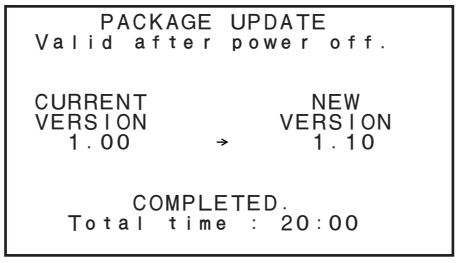
4. Press the MENU knob while the arrow is pointing at "PACKAGE".
5. The YES/NO confirmation menu appears.



6. When YES is selected, the firmware update starts. During the firmware update, the tally blinks at 1 Hz. "UPDATING" indicates the firmware being updated, and "Total time" indicates the elapsed time.



7. When the update is completed normally, the following message that prompts you to turn on/off the power appears. Tally changes from blinking to light on.



8. When the power is turned off and the unit is restarted, the firmware version is updated.

Note

If the firmware could not be updated to new version or if an error is displayed upon completion of version update, it indicates that the firmware version update has failed. Repeat the version update by following step 2 through step 8 again.

1-11-3. Software Option Registration Method by Using USB Memory

This unit contains the software option that can be activated by registering the software key (Install key).
There are two methods of registering the Install key. One is the method by using the USB memory*1 and the other is the method by accessing the XDCAM website. This section describes the method by using the USB memory. For the method by accessing the XDCAM website, refer to "2-3-4. License Registration".

Note

∗1: A general-purpose USB memory used in most computers can be used. However, there can be cases where the message "Unknown USB" or the message "NO USB MEMORY" appears when a USB memory is inserted in the USB slot. These troubles may be caused by any problem in the USB memory, or it may be caused if the USB memory is recognized as an unsupported device. Replace the USB memory with another equivalent USB memory, and try again.

First of all, the process requires USB memory in which the text file "pdw-instkey.lst" is saved for registration.

1. Input the model name, serial number and Install key in this order by using the text editor of a PC to create the text file "pdw-instkey.lst".
   Example of entries in the text file pdw-instkey.lst
   PDW-700,10000,0123456789abcdef
   PDW-700,10001,1234567890bcdefa
   PDW-700,10002,2345678901cdefab

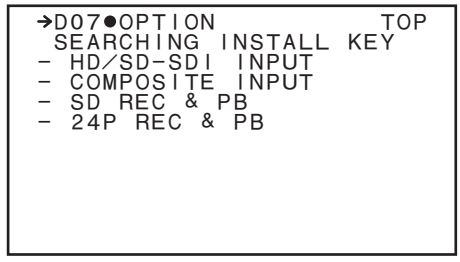
   Note

   Each item (model name, serial number and Install key) should be delimited by comma ",".
   Each character string should be terminated by the "line break" code.

2. Save the created file in the root directory of the USB memory.

Register the Install key by the procedure below.

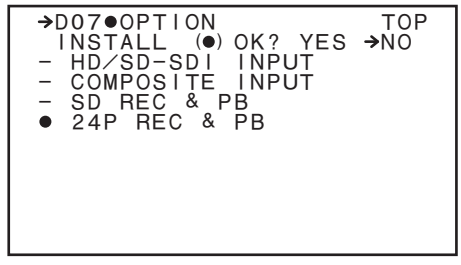
1. Connect the USB memory to the USB slot of the Camcorder.
2. Set the VDR switch on the inside panel to "STBY".
3. After waiting for approx. 30 seconds, open the OPTION page of the DIAGNOSIS menu. While the arrow pointer is pointing to the "D07 OPTION", press and hold the MENU knob. Then, the message "SEARCHING INSTALL KEY" is displayed for approx. 10 seconds, and the search for the soft key is started in the USB memory device.



Note

If the name of the required software option is not displayed on the OPTION page, the firmware of the unit may not support the option or the DVP board or the DCP board may not support the option. In such a case, check the Package Version on the ROM VERSION 1 page of the DIAGNOSIS menu or on the BOARD INFO page of the SERVICE menu.
CBKZ-MD01: Package Version 1.21 or higher
CBKZ-FC02: Package Version 1.50 or higher

4. When the software key is found normally, the message "INSTALL (●) OK ? YES → NO" appears. Select YES to start installation.



5. When the Install key is installed normally, the message "Valid after power off." is displayed. Turn OFF the power according to the message.
6. After the equipment reboots, select the OPTION page of the DIAGNOSIS menu and confirm that the symbol at the top of registered option name is changed from a dash "−" to a circle "○" symbol.

1-12. Other Overview

1-12-1. Notes on Handling Optical Block Assembly

To prevent the damage due to the electrostatic charge, be sure to put the following grounding while handling the optical block assembly (KES-330A).

Grounding for the human body

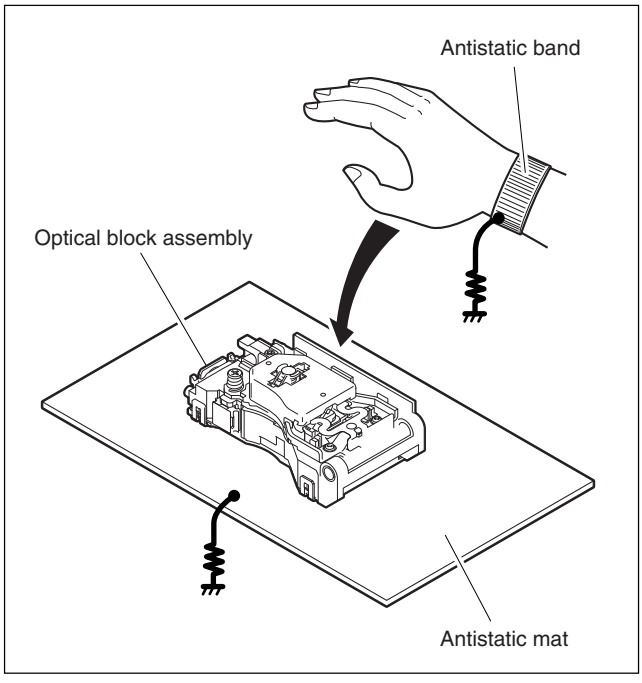
Be sure to put on an antistatic band for grounding (with impedance lower than 10^8 Ω) whose other end is grounded.

Note

Because static electricity charged on clothes is not drained away, be careful not to touch your clothes to the optical block assembly.

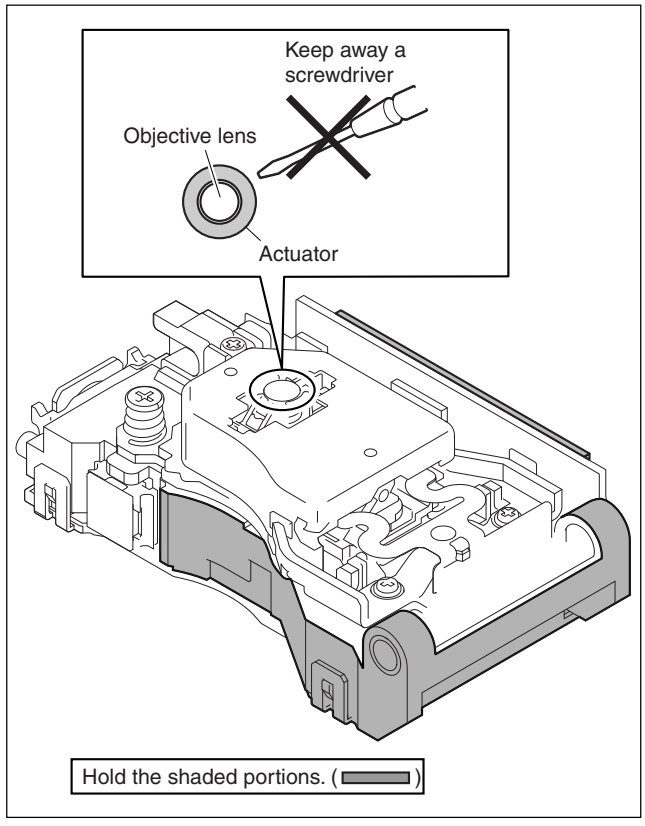
Grounding for the work table

Be sure to place the optical block assembly on an antistatic mat (with impedance lower than 10^9 Ω recommended) or a copper sheet for grounding.



Precautions

- The optical block assembly is a precise unit. Be careful not to subject it to shocks by dropping or rough handling.
- Do not touch the objective lens.
- Hold the slide base (die casting part) when handling the optical block assembly.
  Do not touch the circuit on the print board with your hand or a substance directly; otherwise, the circuit may be damaged.
- The performance of the actuator may be affected if a magnetic material is located nearby, since the actuator has a strong magnetic field.
  Keep magnetic substance away from the actuator. if the magnetic force makes a metallic material such as a screwdriver, reflection block and so on hit the actuator, the objective lens will be damaged.
- Do not allow foreign materials to enter through gap in the cover of the actuator.



1-12-2. Standard Torque for Screws

When tightening a screw, be sure to use the specified torque driver and tightening torque.
When a tightening torque is specified in each removal, reinstallation, replacement, or adjustment procedure in this manual, be sure to use it. When no tightening torque is specified, use the following standard tightening torques.

Fixtures

- Bit for torque driver (for M1.4 / M1.7)
- Bit for torque driver (for M2)
- Bit for torque driver (for M3)
- Torque driver (for 3 kg)
- Torque driver (for 6 kg)
- Torque driver (for 10 kg)

M1.7 (+) screw : $19 \times 10^{-2} \pm 0.01$ N•m (1.9 ±0.1 kgf•cm)
M2 (+) screw : $20 \times 10^{-2} \pm 0.01$ N•m (2.0 ±0.1 kgf•cm)
M2.6 (+) screw : $53 \times 10^{-2} \pm 0.01$ N•m (5.3 ±0.1 kgf•cm)
M3 (+) screw : $80 \times 10^{-2} \pm 0.01$ N•m (8.0 ±0.1 kgf•cm)

1-12-3. Stop Washer

Never re-use the pre-used stop washers.
When attaching the part, be sure to use the new stop washer.

- Stop washer (Sony part number : 3-559-408-11)

How to remove stop washer

1. Remove the stop washer using a pair of small nippers or tweezers.

Notes

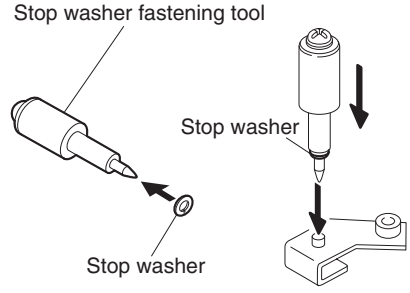
- Be careful not to drop the stop washer in the unit.
- Be careful not to bring the tool into contact with the other parts, especially the drum.

How to install stop washer

When attaching, it is recommended to use the following tool.(Refer to “1-10-1. Service Tools”. for details)
Stop washer fastening tool

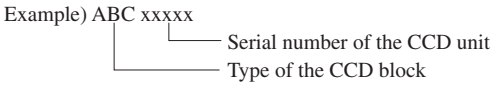
Stop washer fastening tool

1. Put the stop washer to the top thin part of the stop washer fastening tool.
2. Stand the thin top of the tool on the top of the shaft in an upright position.
3. Press thick part of the tool downward and attach the stop washer to the shaft.



1-12-4. Description of CCD Block Number

All of the CCD units have their unique ID numbers.
This number is called the CCD block number indicating the type of the CCD block and serial number.
The label indicating the CCD block number is attached inside of each CCD unit.



Applicable Model	Serial No.	Type of the CCD Block
PDW-700	10001 and Higher	MYA

1-12-5. Memory Backup Battery

WARNING

The lithium battery is critical part to safe operation.
Replace the component with Sony part whose part number appears in the manual published by Sony. If the component is replaced by any part other than the specified ones, this may cause a fire or electric shock.

CAUTION

When replacing the lithium battery, ensure that the battery is installed with "+" and "−" poles connected to the correct terminals.
An improper connection may cause an explosion or leakage of fluid result in physical damage in the surrounding materials.

The FP-157 board is equipped with the data backup battery. When replacing it, be sure to use the specified part.

Replacement part : BT1 (on the FP-157 board)
Part name : CR-2032 (lithium battery)
Part No. : ⚠ 1-528-174-31
Recommended replacement period : Every five years

The memory IC stores the data such as date and time. If the backup memory battery is dead or replaced, these data are all cleared.
For re-setting the data, refer to "Setting the Date / Time of the Internal Clock" in Section 2 of the Operating Instructions.

1-12-6. IC Link Replacement

WARNING

The IC link are critical parts to safe operation.
Replace the components with Sony parts whose part number appear in the manual published by Sony. If the components are replaced by any parts other than the specified ones, this may cause a fire or electric shock.

CAUTION

If a IC link is replaced while the main power is kept on, this may cause electric shock.
Before replacing IC link, not only turn off the POWER switch but also remove the power cable that is connected to the DC IN connector.

The RE-246 board and SW-1385 board are equipped with IC link.
Any an excessive current flow due to abnormality inside the equipment, the IC link blow. If a IC link blows, turn off the main power of the equipment once and inspect inside of the equipment and remove the cause of excessive current. After that, replace the IC link.

Board	Ref. No.	Description	Part No.
RE-246	PS100	IC link 4 A	⚠1-576-677-21
SW-1385	PS1	IC link 4 A	⚠1-576-677-21

1-12-7. Circuit Protection Element

The AT-177 and CNB-25 boards of this unit are equipped with the positive characteristics thermistor (power thermistor) as the circuit protection element. The positive characteristics thermistor limits the electric current flowing through the circuit as the internal resistance increases when an excessive current flows or when the ambient temperature increases. If the positive characteristics thermistor works, turn off the main power of the unit and inspect the internal circuit of this unit. After the cause of the trouble is removed, turn on the main power back again. The unit works normally. It takes about one minute to cool down the positive characteristics thermistor after the main power is turned off.

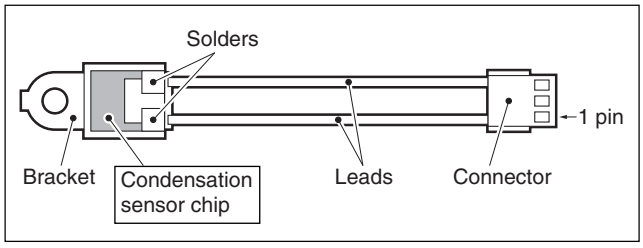
Board	Ref. No.	Address	Part Number	Hold Current
AT-177	THP600	B5 (A side)	⚠1-803-353-21	0.14 A/20°C
CNB-25	THP1	B1 (B side)	⚠1-802-063-21	1.10 A/20°C
	THP2	A1 (A side)	⚠1-802-063-21	1.10 A/20°C

1-12-8. Precautions for Use of Condensation Sensor

Due to the foreign substances adhering to the condensation sensor chip (see figure below), the sensor fails to measure the correct value of residence to humidity. This prevents the unit from functioning properly. If any foreign substance gets adhered to the chip, replace the condensation sensor with a new one.

Notes

- Do not touch the chip with bare hands.
- Do not clean the chip with alcohol or other similar agents.



1-12-9. Precautions for the Battery Connector

The battery connector in this unit is consumable parts. Replace every about 5 years.
If the terminal of connector is deformed or bends due to vibrations or shock, or if the surface of the terminal corrodes due to long-term outside use or other similar use, the unit may malfunction.
Replace the battery connector immediately if the terminal is deformed or bends, or if the surface color changes. (Refer to Section 1-7-10.)

1-12-10. Notes on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with “o” at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Harness

Harnesses with no part number are not registered as spare parts.

1-12-11. Unleaded Solder

Boards requiring use of unleaded solder are printed with a lead free mark (LF) indicating the solder contains no lead. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Notes

- Be sure to use the unleaded solder for the printed circuit board printed with the lead free mark.
- The unleaded solder melts at a temperature about 40 °C higher than the ordinary solder, therefore, it is recommended to use the soldering iron having a temperature regulator.
- The ordinary soldering iron can be used but the iron tip has to be applied to the solder joint for a slightly longer time. The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful.

Section 2
XDCAM Web Site

2-1. XDCAM Web Site Overview

Operations such as confirming the settings of the camcorder and upgrading the firmware can be performed via the network connector.

The XDCAM website consists of the following menus.

Status menu
- Device Information
- Hours Meter
- Software Version

Disc menu
- Disc Properties
- Thumbnails

Maintenance menu
- Network
- Account
- Software Update
- License Registration

Connecting to XDCAM Website

Tools/Equipment Required
- Personal computer (referred to as PC hereafter)
- Network cable (crossover or straight-through)

Setting the Camcorder
- Change the ETHERNET/USB of power save item in OPERATION menu to ENABL (refer to Operation manual)
- Set the network item in MAINTENANCE menu (refer to Operation manual)

Procedure
1. Connect the camcorder to the host PC using one of the following ways. (Refer to Connection Diagram.)
   - Directly connect the camcorder to the host PC.
   - Connect the camcorder to the host PC through a network device (such as a hub).

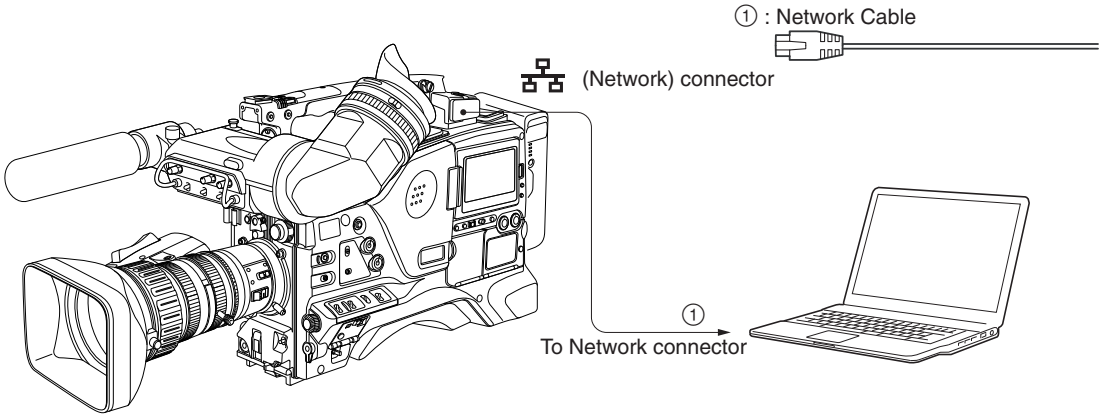
2. Start the web browser of the host PC. Enter “http://192.168.1.10” in the Address bar. (The underlined part is the IP address of the unit.)
   Note
   Use Internet Explorer for the web browser of the host PC.
   Other web browsers may not function correctly.

3. Enter “admin” for User name and “pdw-700” for Password, and then click “OK”.
   Note
   User name and User password can be changed on the Account page.

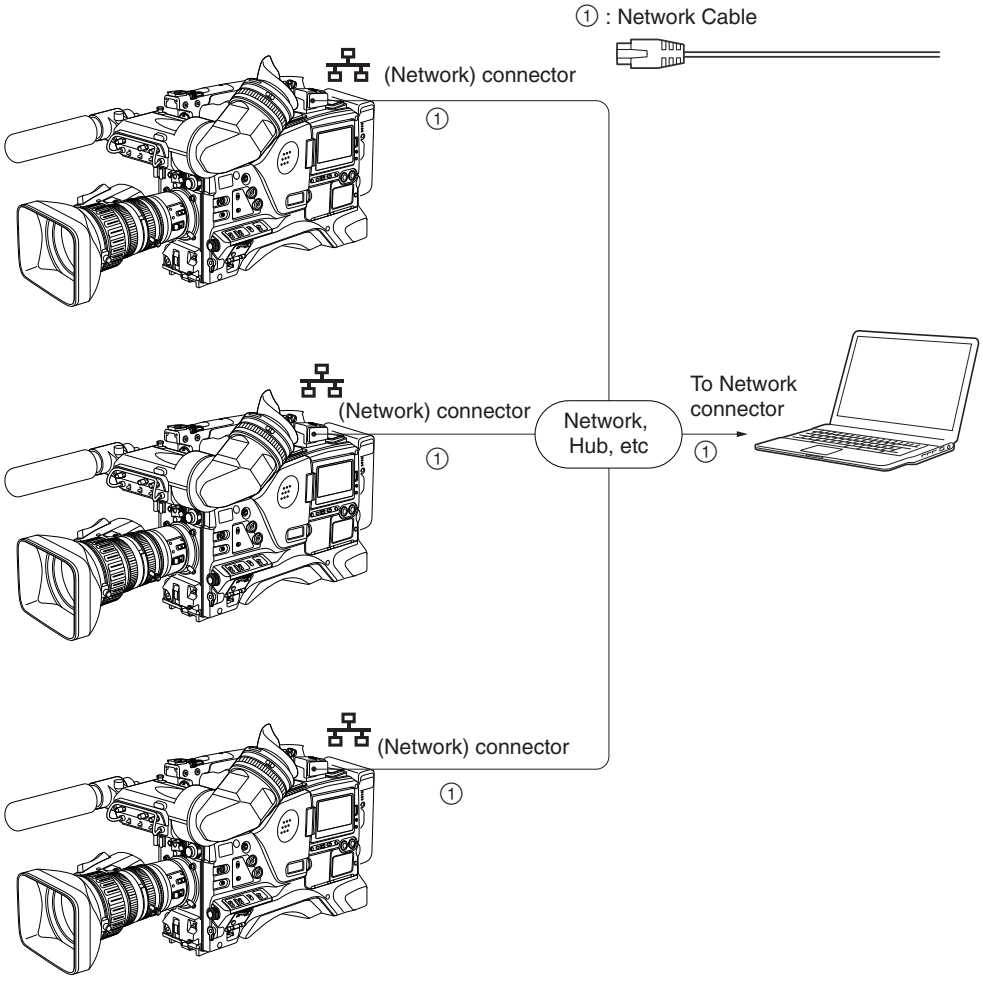
4. The XDCAM top page appears. Click a menu you want to browse on the left frame.

Connection Diagram

Direct connection of a camcorder (single) to the host PC



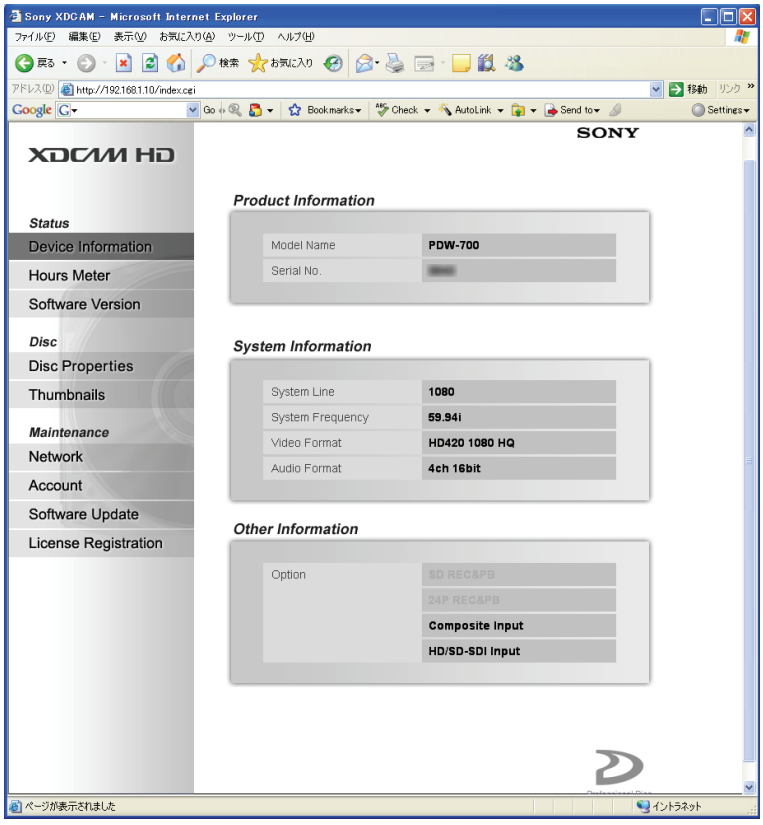
Connection of the camcorder to the host PC through the other Network device



2-2. Status Menu

2-2-1. Device Information

The settings of the camcorder can be checked in the Device Information page of the Status menu.



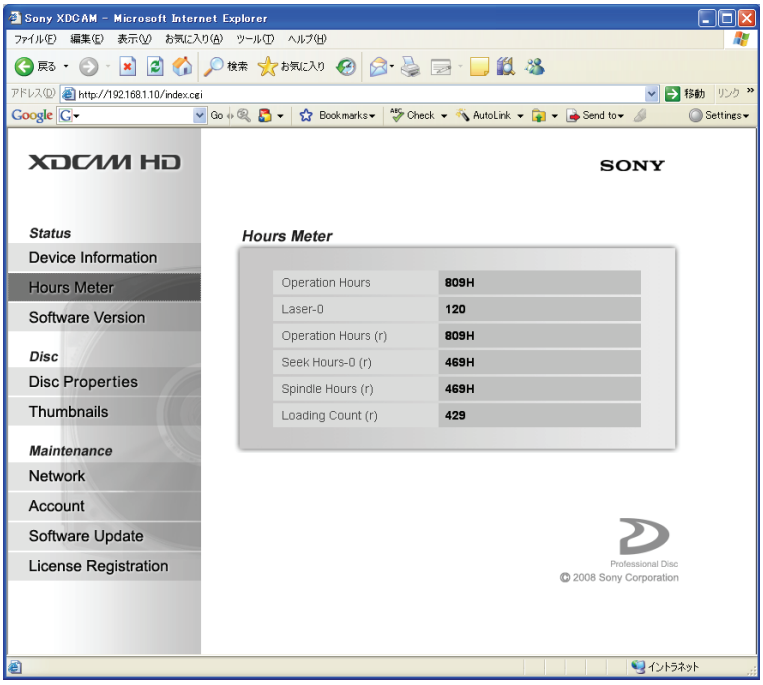
Item		Setting	Function
Product Information	Model Name	Display only	Displays the model name
	Serial No.	Display only	Displays the serial No.
System Information	System Line	Display only	Displays the signal standard
	System Frequency	Display only	Displays the signal standard
	Video Format	Display only	Displays the video recording format
	Audio Format	Display only	Displays the audio recording format
Other Information	Option	Display only	Displays the installed option

2-2-2. Hours Meter

The hours meter of the camcorder can be displayed on the Hours Meter page of the Status menu.

Note

The function is the same as that of the HOURS METER of the DIAGNOSIS menu on the camcorder.
For “How to reset the hours meter”, contact your local Sony Sales Office/Service Center.



Item	Setting	Function
Operation Hours	Display only	Displays the total operation hours
Laser-0 *1	Display only	Displays the output count of laser on optical block assembly*2
Operation Hours (r)	Display only	Displays the total operation hours (Unit: hour, Resettable)
Seek Hours-0 (r)	Display only	Displays the total running hours of seek on optical block assembly (Unit: hour, Resettable)
Spindle Hours (r)	Display only	Displays the total running hours of spindle motor (Unit: hour, Resettable)
Loading Count (r)	Display only	Displays the total loading counts of disc (Resettable)

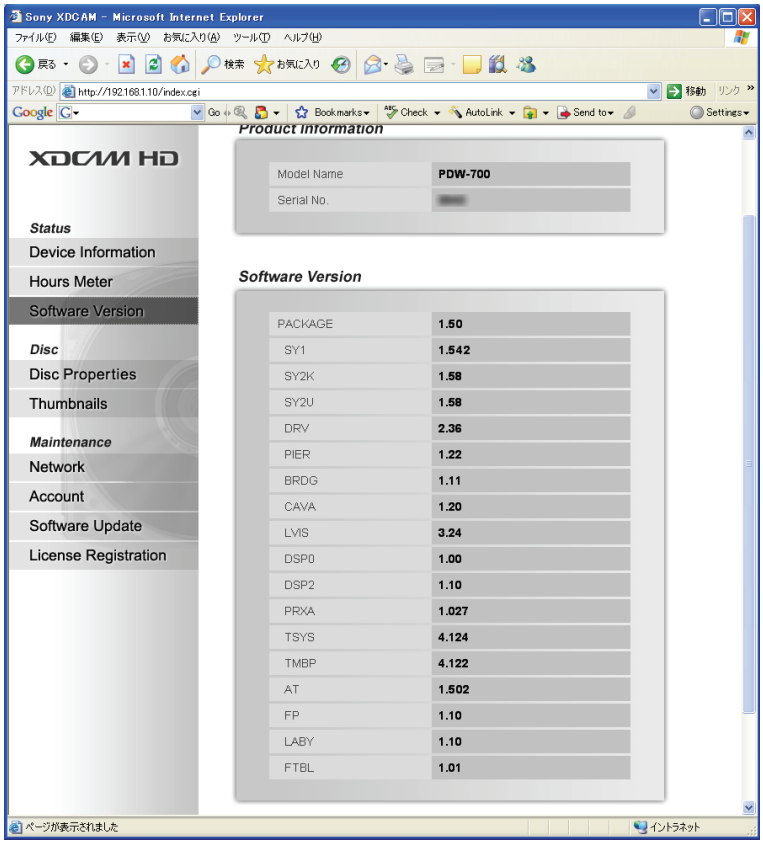
∗1 : Not resettable for this unit.
∗2 : Increment of the counter depends on recording/playback ratio and operating temperature.

2-2-3. Software Version

The version of the software can be checked in the Software Version page of the Status menu.

Note

The function is the same as that of the ROM VERSION menu of the DIAGNOSIS menu on the camcorder.



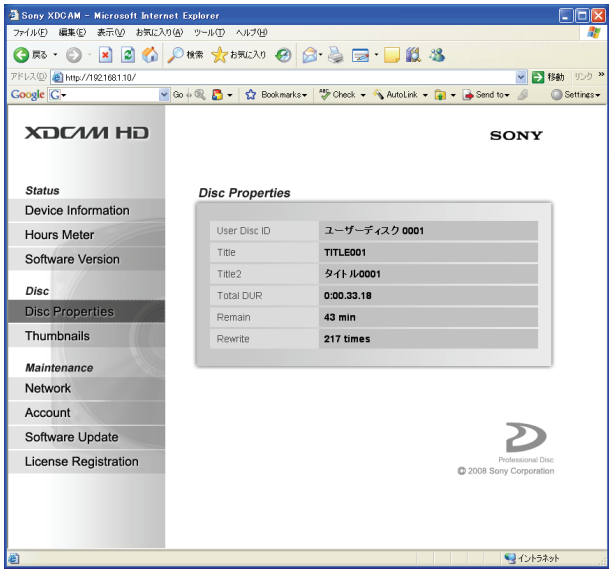
Item	Setting	Function	
Product Information	Model Name	Display only	Displays the model name
	Serial No.	Display only	Displays the serial No.
Software Version	PACKAGE	Display only	Displays the firmware package version*1
	SY1	Display only	Displays the IC200 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	SY2K	Display only	Displays the IC1300 version stored in the ROM (IC1405, IC1406) on the SY-355 board*1
	SY2U	Display only	Displays the IC1300 version stored in the ROM (IC1405, IC1406) on the SY-355 board*1
	DRV	Display only	Displays the IC600 version stored in the ROM (IC602) on the DR-606 board*1
	PIER	Display only	Displays the DVP-45 board's IC1900 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	BRDG	Display only	Displays the SY-355 board's IC900 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	CAVA	Display only	Displays the DVP-45 board's IC200 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	LVIS	Display only	Displays the DVP-45 board's IC400 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	DSP0	Display only	Displays the DVP-45 board's IC800 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	DSP2	Display only	Displays the DVP-45 board's IC801 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	PRXA	Display only	Displays the DVP-45 board's IC900 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	TSYS	Display only	Displays the DVP-45 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	TMBP	Display only	Displays the DVP-45 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-355 board*1
	AT	Display only	Displays the IC209 version stored in the ROM (IC302, IC303) on the AT-177 board*1
	FP	Display only	Displays the ROM version of the IC921 on the FP-157 board*1
	LABY	Display only	Displays the ROM version of the IC1000 on the DCP-44 board*1
	FAM	Display only	Displays the SY-355 board's IC600 version stored in the ROM (IC505, IC506) on the SY-355 board*1 *2
	FTBL	Display only	Displays the ROM version of the IC505, IC506 on the SY-355 board*1

*1 : Using the firmware package file, the version can be upgraded.
*2 : Displayed only when OPERATION MENU - POWER SAVE - i.LINK(FAM) is set to ENABL.

2-3. Disc Menu

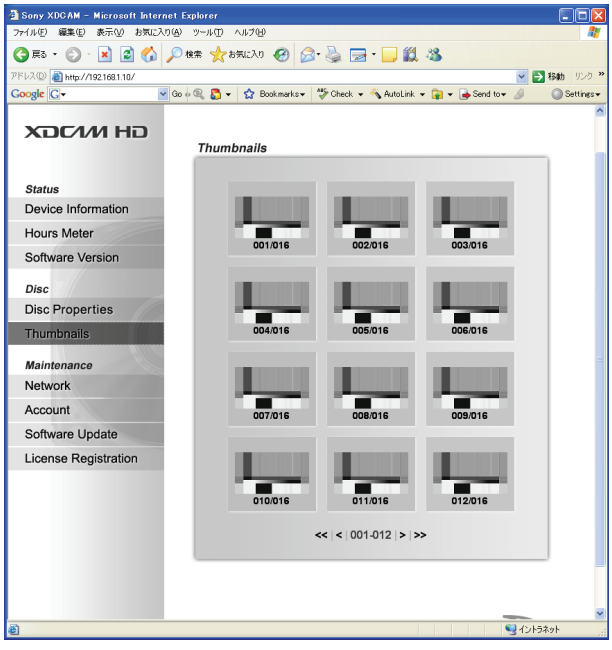
2-3-1. Disc Properties

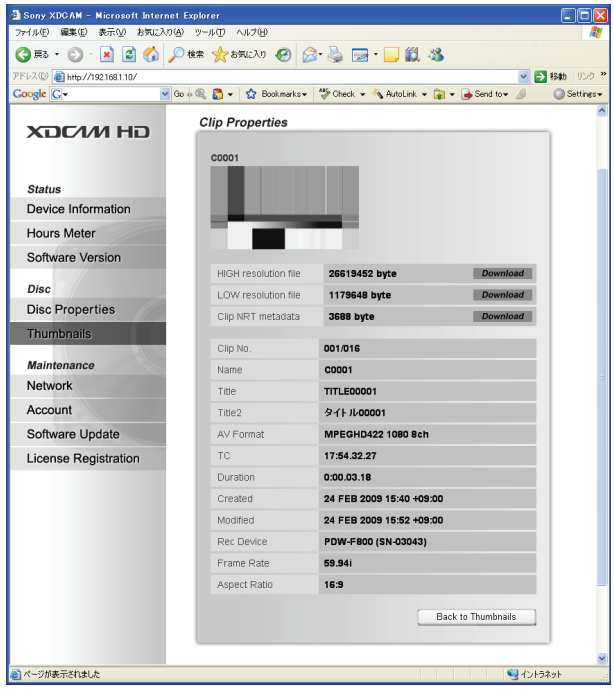
The information on the disc inserted in the camcorder can be checked on the Disc Properties page of the Disc menu.
For details, refer to Operation manual.



2-3-2. Thumbnails

The thumbnails and properties of the clips on the disc inserted in the camcorder can be checked on the Thumbnails page of the Disc menu.
For details, refer to Operation manual.





2-4. Maintenance Menu

2-4-1. Software Update

In the Software Update page of the Maintenance menu, the batched update using the firmware package file can be performed.

In this section, the update method using the Web browser (Internet Explorer) is explained.

Note

The figures shown in this page are the sample of display. Due to the specification change, the actual screen display may differ from the sample figures.

Tools/Equipment Required

- Personal computer (referred to as PC hereafter)
- Firmware package file
- Network cable (crossover or straight-through)

For obtaining the firmware package, contact your local Sony Sales Office/Service Center.

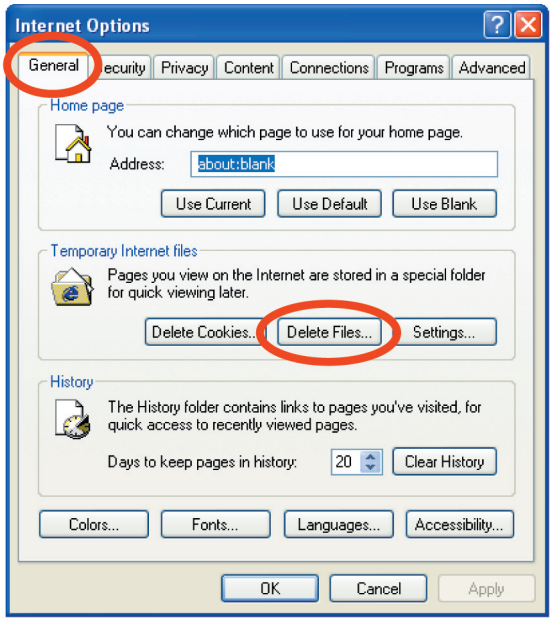
Preparation

1. Eject the disc.
2. Remove the i.LINK cable, the headphones and the audio cable.
3. Set the VDR switch in inside panel to STBY.
4. Connect the camcorder in either method mentioned below. (Refer to Connection Diagram.)
   - Connect the camcorder and the host PC via other network device (such as a hub).
   - Connect the camcorder and the PC directly (using network crossover cable).
5. Copy the obtained firmware package to an arbitrary directory on the host PC.
6. Start up the Internet Explorer of host PC.

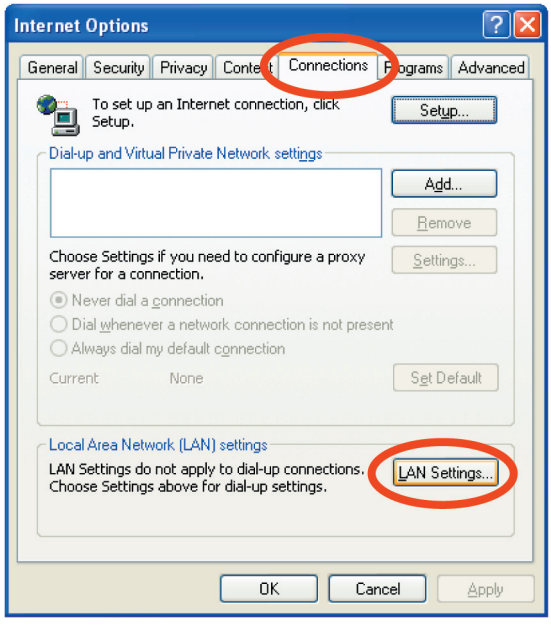
   Note

   Use the Internet Explorer for updating.
   If other browser is used, the update may not be properly done.

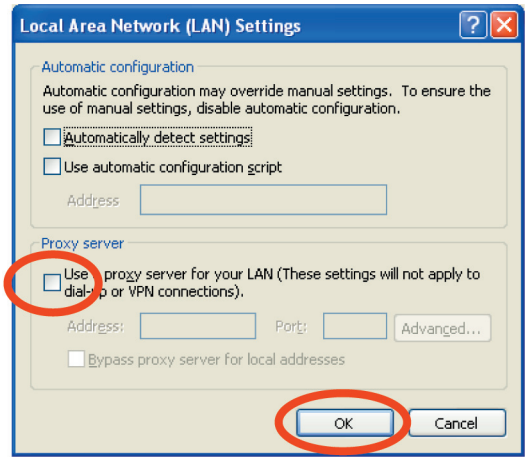
7. Select “Tool” - “Internet Options”.
8. Click “Delete Files” on the “General” page to delete the Temporary Internet files.



9. The confirmation message appears. Click “OK”.
10. Click “LAN Settings” on the “Connections” page.



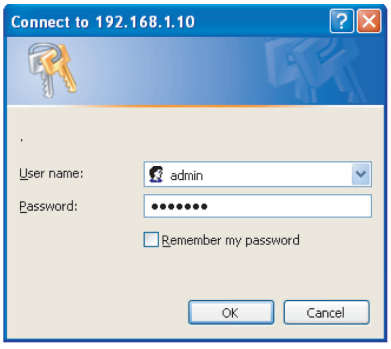
11. Confirm that the checkbox of “Use a proxy server for your LAN” is not checked.
    If checked, uncheck the checkbox.
12. Click “OK”.

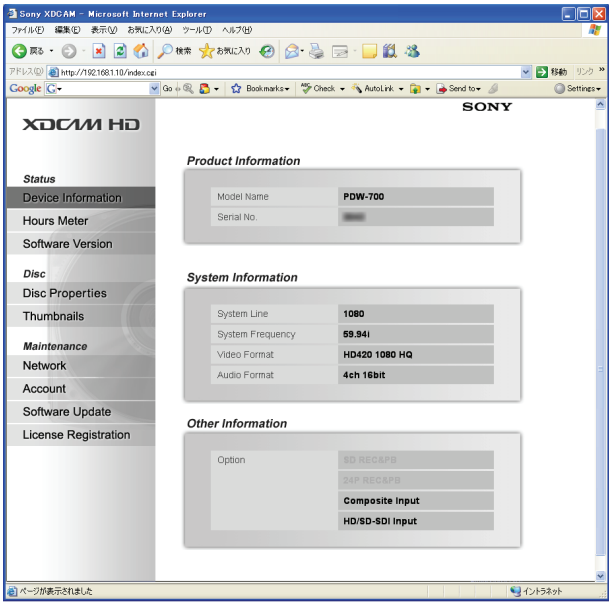

Local Area Network (LAN) Settings
Automatic configuration
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.
Automatically detect settings
Use automatic configuration script
Address
Proxy server
Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).
Address:
Port:
Advanced...
Bypass proxy server for local addresses
OK
Cancel

13. Click “OK” on the Internet Options window.

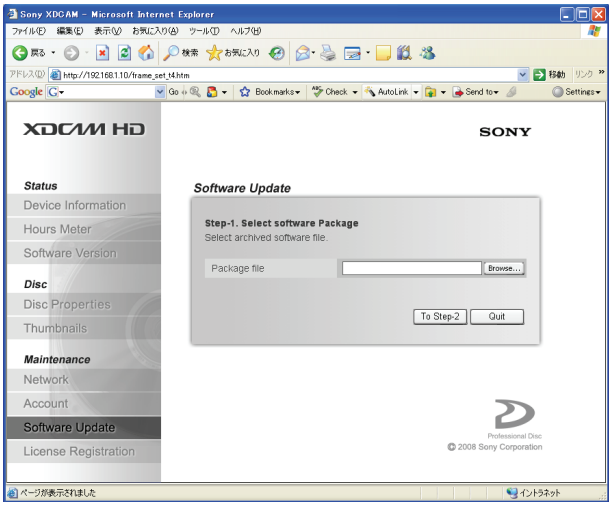
Update Procedure

1. Start up the Internet Explorer, and enter “http://192.168.1.10” in the Address bar. (Where the underlined part is the IP address of the camcorder.)
2. Enter “admin” for User name and “pdw-700” for Password. Then click “OK”.
   The XDCAM top page appears.

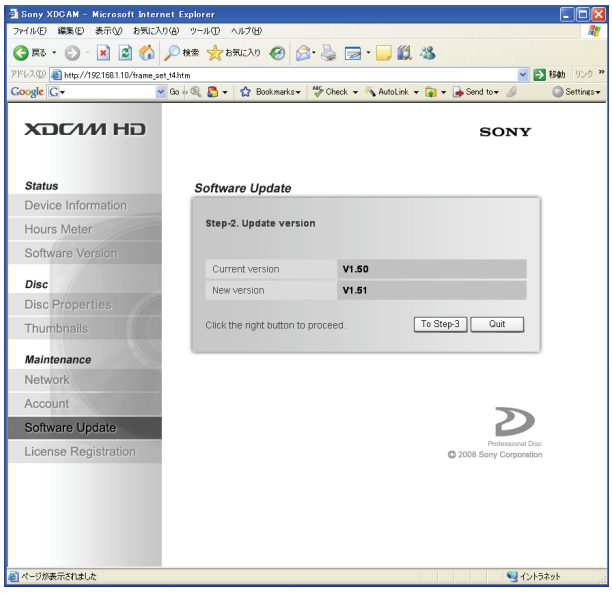




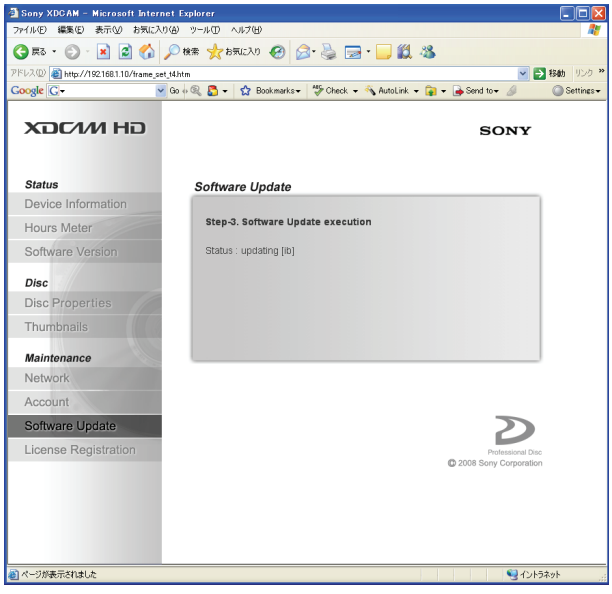
3. Click “Software Update” on the Maintenance menu in the left frame.
4. Click “Browse” and select the firmware package file copied in step 5 of “Preparation”.
5. Click “To Step-2”.



6. The current version firmware and new version firmware appears.
   When the firmware update is click “To Step-3”.



7. The update starts, and it changes the following display.

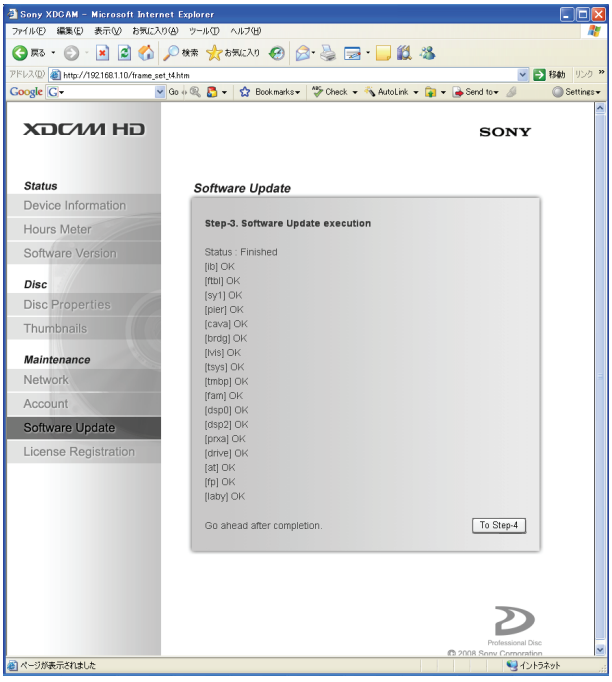


8. When the status turns to “Finished”, check that each firmware program is properly updated or not. (OK or NG)

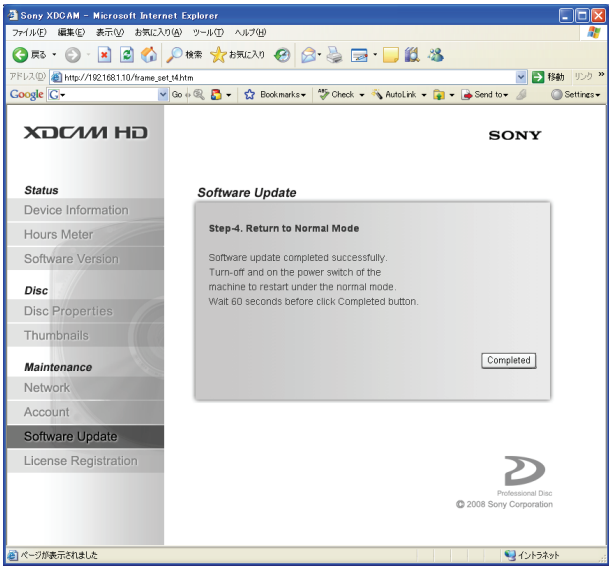
Note

If no change is observed on the download menu for 20 minutes or any firmware program is marked “NG”, the update is failed. In this case, return to step 2 in “Preparation”. If the update is failed again, contact your local Sony Sales Office/Service Center.

9. When “OK” appears for all of the firmware programs, click “To Step-4”.



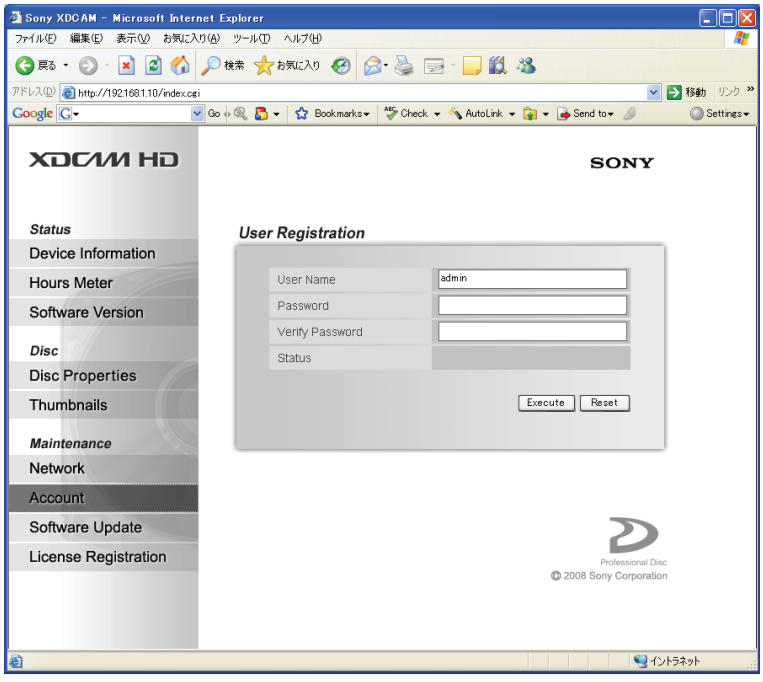
10. Click “Completed”.



11. Turn off the POWER switch and turn on again, then the update is completed.

2-4-2. Account

The user password for the XDCAM website can be changed on the Account page of the Maintenance menu.



Item		Setting	Function
User Registration	User Name	31-byte alphanumeric and hyphen*	User name
	Password	31-byte alphanumeric and hyphen*	New password
	Verify Password	31-byte alphanumeric and hyphen*	New password (Re-enter the new password for verification)
	Status	Display only	Success: Displayed when the user password is changed Error: Displayed when an unusable character is used in the password, or the verify password is conflict

* : Uppercase and lowercase characters are distinguished.

Procedure

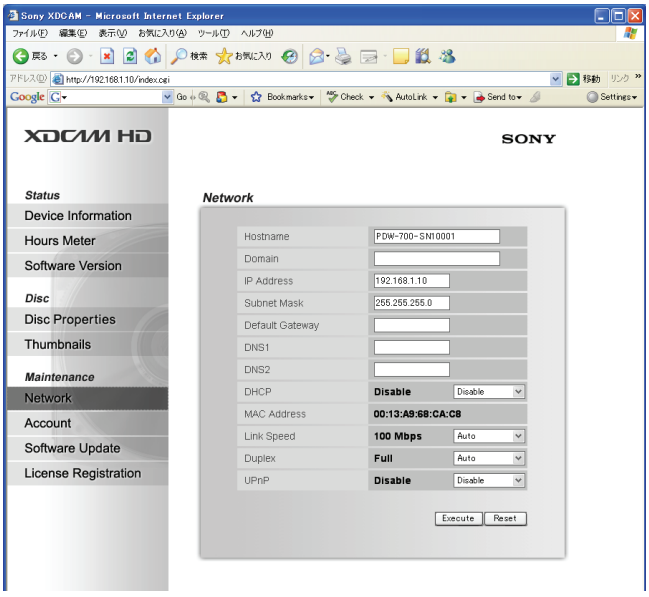
1. Enter the new password in the Password box and Verify Password box.
   (Pressing “Reset” clears the Input window.)
2. Press “Execute” to change the password.

2-4-3. Network

The network-related settings can be changed on the Network page of the Maintenance menu.

Note

The function is the same as that of the NETWORK page of the MAINTENANCE menu on the camcorder.



Item	Setting	Default	Function
Hostname	Character string	Serial No. of PDW-700	Sets a host name
Domain	Character string	–	Sets a domain name
IP Address	xxx.xxx.xxx.xxx	192.168.1.10	Sets an IP address (See below)
Subnet Mask	xxx.xxx.xxx.xxx	255.255.255.0	Sets a subnet mask (See below)
Default Gateway	xxx.xxx.xxx.xxx	0.0.0.0	Sets a default gateway (See below)
DNS1	xxx.xxx.xxx.xxx	–	Sets a DNS server 1
DNS2	xxx.xxx.xxx.xxx	–	Sets a DNS server 2
DHCP	Enable/Disable	Disable	Sets whether to automatically acquire an IP address on the DHCP server Enable: Enables automatic acquisition. If the server does not respond in 30 seconds, the IP address is set by Auto IP Disable: Disables automatic acquisition
MAC Address	Display only	–	Displays a MAC address
Link Speed	AUTO/10Mbps/100Mbps	Auto	Sets a communication speed
Duplex	AUTO/Full Duplex/ Half Duplex	Auto	Sets a communication mode Auto Full Duplex: Full-duplex communication Half Duplex: Half-duplex communication
UPnP	Enable/Disable	Disable	Sets whether to use a UPnP Enable: Use Disable: Not use

Procedure

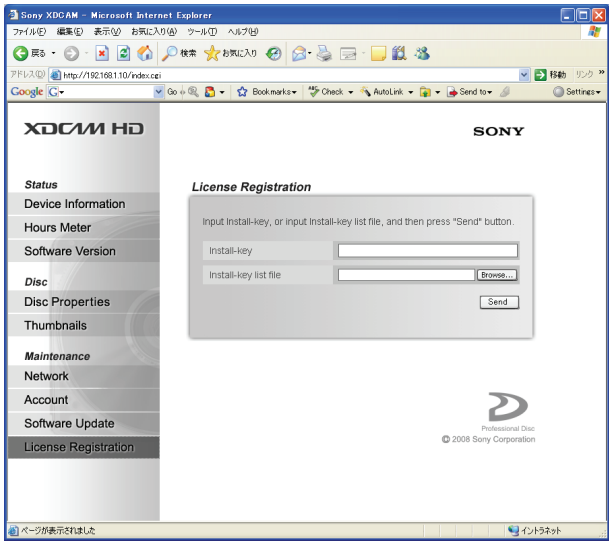
1. Enter the IP address (or the subnet mask or the default gateway).
   (Pressing “Reset” clears the Input window.)
2. Press “Execute” to change the setting.

2-4-4. License Registration

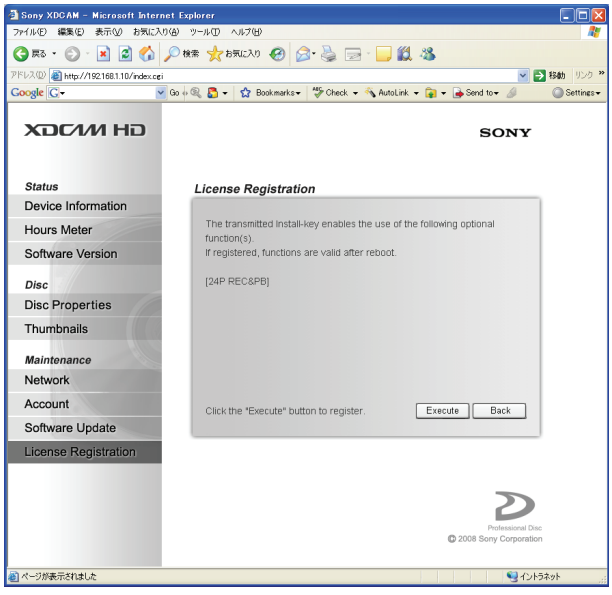
License registration of software option using the Install key can be made from the License Registration page of the Maintenance menu.

Procedure

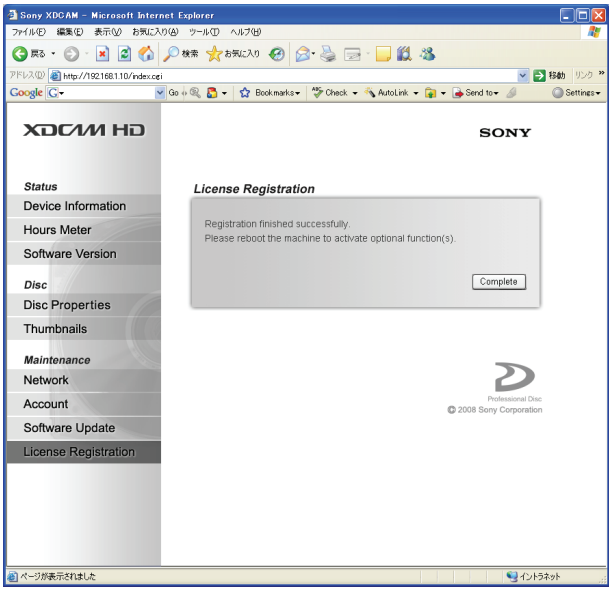
1. Enter the Install key character string in the Install-key field or alternately click the “Browse” button in the Install-key list file field to select the Install key list file.



2. Click “Send”.
3. The software option that is enabled by sending the Install key is displayed. To register the software option being displayed, click the “Execute” button.



4. The page that tells completion of registration appears.



5. Turn the POWER switch OFF once and back ON. Functions of the registered software option are enabled.
6. Confirm that the software option can be operated from the Device Information page of the Status menu.

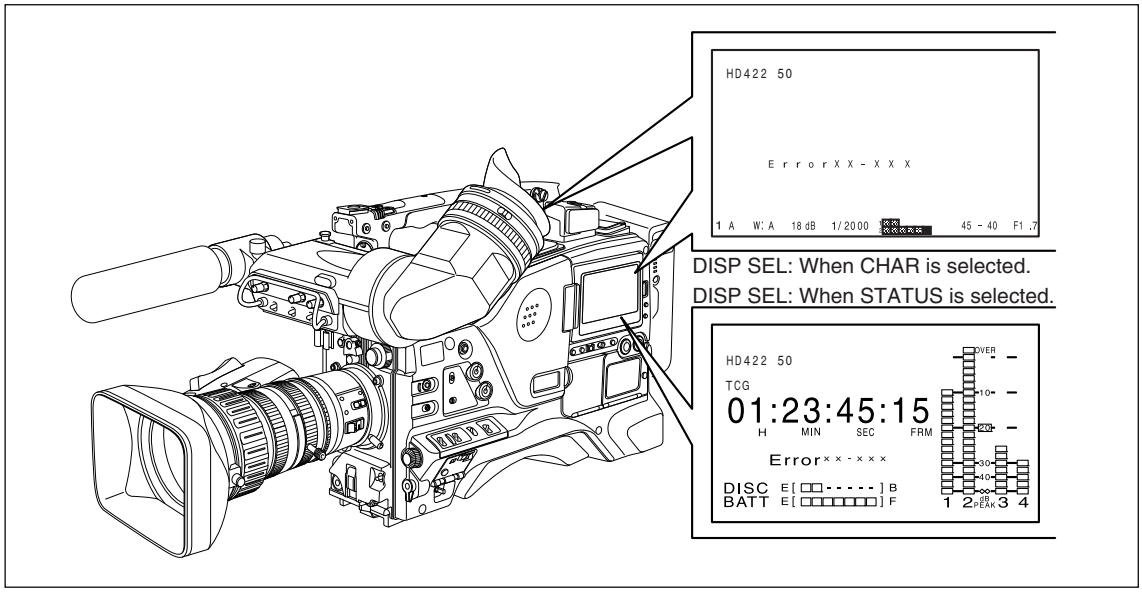
Section 3
Error Messages

3-1. Error Messages Overview

This PDW-700 has a self diagnosis function to check internal errors. When the PDW-700 detects an error, its error code and description are displayed on the following display units.

- Viewfinder display (error code only)
- Color LCD display

When an error occurs, its error code information is recorded in the error logger (maintenance logger) of the main unit and also in the error logger (drive logger) of the drive unit.
For details of the error logger, refer to “4-15. SERVICE SUPPORT Menu” for the error logger of the main unit, and to “4-10-22. ERROR LOGGER” for the error logger of the drive unit.
Refer to respective error tables for display contents on the viewfinder display and for recording/non-recording in the error loggers.

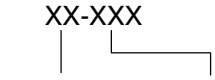


3-2. Error Code List

3-2-1. Main Code and Sub Code

Main Code

An error code is provided in combination of 2-digit main code and 3-digit sub code.



Main code	Main error description
0X	Optical drive control errors, device errors
	• 02: Optical devices (LD, LCD)
	• 03: Optical drive two-axis (FCS, TRK)
	• 04: Optical drive seeking
	• 06: Optical drive SA actuator
	• 08: Optical drive spindle
20	Loader assembly errors
3X	Optical drive sensor system errors
5X	Read data errors
6X	Startup errors
91	Interface errors between CPU and peripheral devices
92	Synchronization system errors
95	Video/audio signal processing device errors

If multiple errors occur simultaneously

The highest-priority error is displayed.
When a higher-priority error is cleared, the following-priority error code is displayed.

Protection Mode

When this unit detects an error, it enters a protection mode to prevent the cartridge disc, optical drive, and other components from damage or failure.
The protection mode depends on error status. When a cartridge is inserted, press the EJECT button and remove the cartridge.
The cartridge may not be ejected even after the EJECT command has been received depending on error status. In this case, turn the unit power OFF and ON.

3-2-2. Error 0X

When errors related to optical drive control or to devices are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
02	020	←	○	○	Optical block assembly is recording at maximum laser output. Perform the pickup lens cleaning. (Refer to Section 4-10-17.)
	F2E	←	○	○	Laser of optical block assembly is determined to be deteriorated in the laser deterioration assessment for optical block assembly.
	F37	←	○	○	No movement is detected in the ND filter initial operation check of optical block assembly.
	X25	←	○	○	The laser output of the optical block assembly is abnormal.
	X26	←	○	○	The laser output coefficient of the optical block assembly cannot be adjusted.
	X27	←	○	○	The laser current of the optical block assembly is abnormal (zero or excessive).
	X28	←	○	○	The optical block assembly laser output is stopped due to the judgment that no cartridge is inserted.
	X37	←	○	○	The ND filter setting of the optical block assembly cannot be changed.
03	060	←	×	○	Tracking servo of optical block assembly is frequently down.
	X54	←	○	○	No signal can be detected from the disc required for the focus servo of the optical block assembly.
	X57	←	○	○	No control current is detected in the focus servo of the optical block assembly.
	X58	←	○	○	Excessive control current is detected in the focus servo of the optical block assembly.
	X67	←	○	○	No control current is detected in the tracking servo of the optical block assembly.
	X68	←	○	○	Excessive control current is detected in the tracking servo of the optical block assembly.
04	X7C	←	○	○	Optical block assembly cannot move to disc's innermost circumference.
	X7D	←	○	○	Optical block assembly cannot move to disc's outermost circumference.
06	049	←	○	○	SA actuator of optical block assembly cannot move to the target position.
	E41	←	○	○	The SA actuator reference position cannot be detected during the startup adjustment of the optical block assembly.
	F41	←	○	○	The SA actuator reference position cannot be detected during the power-on initialization of the optical block assembly.
08	091	←	○	○	Spindle motor does not rotate after the predetermined time has passed (or no FG signal is detected).
	095	←	○	○	Spindle motor cannot be stopped (or abnormal FG signal is detected).
	292	←	○	○	Spindle motor rotation is detected during vertical move of loading. *
	992	←	○	○	Spindle motor rotation is detected during vertical move of unloading. *

* : The vertical move of loading/unloading is also carried out by STBY ON/OFF.

Sub Code

Note

Any number of the following is applicable for “X” in the sub codes below, showing an operation status where the error is detected.

Example) Error 0X (X27)

X27→827: Laser current of optical block assembly is abnormal (zero or excessive) “during horizontal move of unloading”.

Example) Error 5X (X0B)

X0B→80B: Address cannot be read from the disc in optical block assembly “during horizontal move of unloading”.

0: Operation cannot be identified or no need to be identified.
1: During loading
2: During vertical move of loading
3: Disc is not rotating
4: Seeking
5: Reading
6: Writing
7: Standby state
8: During horizontal move of unloading
9: During vertical move of unloading
A: During disc removal
B: During lens cleaning or device checking
C, D: (Not used)
E: During startup adjustment of optical block assembly
F: During power-on initialization of optical block assembly SA actuator

3-2-3. Error 20

When errors related to loader assembly are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
20	018	←	○	○	An abnormal current of the loading motor is detected.
	111	←	○	○	Horizontal move of loading did not end within the predetermined time.
	117	←	○	○	Displacement of cartridge is detected in the loader during horizontal move of loading.
	118	←	○	○	An abnormal current of the loading motor is detected during horizontal move of loading.
	211	←	○	○	Vertical move of loading did not end within the predetermined time.
	213	←	○	○	Cartridge cannot be detected after loading.
	217	←	○	○	Displacement of cartridge is detected in the loader during vertical move of loading.
	218	←	○	○	An abnormal current of the loading motor is detected during vertical move of loading.
	811	←	○	○	Ejection operation did not end within the predetermined time.
	818	←	○	○	An abnormal current of the loading motor is detected during the ejection operation.
	911	←	○	○	Unchucking operation did not end within the predetermined time.
	918	←	○	○	An abnormal current of the loading motor is detected during the unchucking operation.

3-2-4. Error 3X

When errors related to the optical drive sensor system are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
34	500	←	○	○	Loader position sensor (SE-709 board) is detects abnormal code.
	509	←	○	○	Sensor hole (SE-857,858 board) is detects abnormal code.
35	500	ACC Sensor!	×	○	Abnormality of acceleration sensor is detected.
37	500	High TEMP!	×	○	The temperature sensor of the optical block assembly is abnormal.
3C	500	HUMID!	×	○	Dew condensation is detected.

3-2-5. Error 5X

When read data errors are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
50	010	(Not displayed)	×	○	BCA area data cannot be read.
	011	(Not displayed)	×	○	BCA area data is abnormal.
51	020	DI read err	×	○	PIC area data cannot be read.
	021	DI read err	×	○	PIC area data is abnormal.
52	X0B	Read err	×	○	Address cannot be read from disc in optical block assembly.

3-2-6. Error 6X

When errors related to startup operation are detected, the following error codes are displayed.

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
60	E00	(Not displayed)	×	○	Optical block assembly cannot seek to target position during startup.
6F	E00	DRV ADJ err	×	○	Optical block assembly startup adjustment cannot be completed.

3-2-7. Error 91

When interface errors between CPU and peripheral devices are detected, the following error codes are displayed.

Note

System control CPU: IC200 on the SY-355 board

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
91	125	←	○	×	System control CPU (FP: IC921/FP-157 board) detects interruption in communication with key control CPU (System control CPU detects).
	130	←	○	×	System control CPU detects flash memory (IC505, IC506/SY-355 board) error.
	13B	←	○	×	System control CPU detects an error in hours meter area (EEPROM: IC200/SY-355 board).
	13C	←	○	×	System control CPU detects an error in adjustment data area (EEPROM: IC300/SY-355 board).
	13D	←	○	×	System control CPU detects an error in hours meter area (FROM: IC507/ SY-355 board).
	155	←	○	×	System control CPU detects interruption in communication with optical drive (DR-606 board).
	165	←	○	×	System control CPU detects interruption in communication with camera control CPU (IC209/AT-177 board) (System control CPU detects).
	185	←	○	×	System control CPU detects interruption in communication with IC for driving color LCD (IC1/PD-118 board) (System control CPU detects).
	1C1	←	○	×	System control CPU detects software option's installation key error.
	215	←	×	×	Key control CPU (FP: IC721/FP-157 board) detects interruption in communication with system control CPU (Key control CPU detects).
	239	←	○	×	Key control CPU (FP: IC921/FP-157 board) detects EEPROM (IC913/FP-157 board) error.
	23E	←	○	×	Key control CPU (FP: IC921/FP-157 board) detects color LCD EEPROM (IC3/PD-118 board) error.
	275	←	○	×	Key control CPU (FP: IC921/FP-157 board) detects I^2C I/O (IC202/CNB-25 board) error.
	285	←	○	×	Key control CPU (FP: IC921/FP-157 board) detects interruption in communication with color LCD EEPROM (IC1/PD-118 board) error (Key control detects).
	2B5	←	○	×	Key control CPU (FP: IC921/FP-157 board) detects Real time Clock (IC908/FP-157 board) error.
	430	←	○	×	System control CPU2 (IC1300/SY-355 board) detects flash memory (IC1405,IC1406/SY-355 board) error.
	551	←	○	○	Optical drive's system control CPU (DRV: IC600/DR-606 board) detects firmware error. Perform the firmware update. (Refer to Section 1-11-2.)
	595	←	○	○	Optical drive's system control CPU (DRV: IC600/DR-606 board) detects interruption in communication with SV DSP (IC400/DR-606 board).
	596	←	○	○	Optical drive's system control CPU (DRV: IC600/DR-606 board) detects no reply from SV DSP (DRV: IC400/DR-606 board) during communication with SV DSP.

3-2-8. Error 92

When synchronization system errors are detected, the following error codes are displayed.

Note

System control CPU: IC200 on the SY-355 board

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
92	101	←	○	×	System control CPU detects REF error.
	102	←	○	×	System control CPU detects frame error in input system.

3-2-9. Error 95

When interface errors between device ICs are detected, the following error codes are displayed.

Note

System control CPU: IC200 on the SY-355 board

Optical drive's system control CPU (DRV): IC600 on the DR-606 board

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
95	101	←	○	×	Communication error between system control CPU and PCI bridge (IC900/SY-355 board) is detected.
	102	←	○	×	Communication error between system control CPU and FAM (IC600/SY-355 board) is detected.
	103	←	○	×	Communication error between system control CPU and composite decoder (IC100/IV-59 board) is detected.
	104	←	○	×	Communication error between system control CPU and MPEG IMX encoder (IC1600/DVP-45 board) is detected.
	107 during recording	←	○	×	Communication error between system control CPU and MPEG HD codec (TORINO: IC1000,IC1200,IC1400/DVP-45 board) is detected during recording.
	109 during playback	←	○	×	Communication error between system control CPU and MPEG HD codec (TORINO: IC1000,IC1200,IC1400/DVP-45 board) is detected during playback.
	108 during recording	←	○	×	MPEG HD codec (TORINO: IC1000, IC1200, IC1400 / DVP-45 board) has become abnormal during recording.
	10A during playback	←	○	×	MPEG HD codec (TORINO: IC1000, IC1200, IC1400 / DVP-45 board) has become abnormal during playback.
	10C	←	○	×	System control CPU detects an error in LVIS (IC400 / DVP-45 board).
	10F during recording	←	○	×	System control CPU detects PROXY VIDEO block in LVIS (IC400 / DVP-45 board) error during recording.
	110 during playback	←	○	×	System control CPU detects PROXY VIDEO block in LVIS (IC400 / DVP-45 board) error during playback.
	111 PB DSP	←	○	×	Communication error between system control CPU and PB DSP (IC801/ DVP-45 board) is detected.
	113 REC DSP	←	○	×	Communication error between system control CPU and REC DSP (IC800/ DVP-45 board) is detected.
	116	←	○	×	Communication error between system control CPU and PROXY AUDIO DSP (IC900/DVP-45 board) is detected.

(Continue)

(Continued)

Main code	Sub code	Time data display	Maintenance logger	Drive logger	Description
95	503	←	○	○	Optical drive's BDC (IC300/DR-606 board) error is detected during initial check.
	507	←	×	○	Adjustment data cannot be read from EEPROM in optical block assembly.
	508	←	○	○	Hours meter data cannot be read from EEPROM in optical block assembly.
	509	←	○	○	Adjustment data cannot be read from optical drive's EEPROM (IC4/SE-857 board).
	50A	←	○	○	Hours meter data cannot be read from optical drive's EEPROM (IC4/SE-857 board).
	50C	←	○	○	Optical drive's SYS PE (IC700/DR-606 board) configuration error is detected.
	50F	←	○	○	Cannot access SDRAM (IC301/DR-606 board) for Optical driver's BDC (IC300/DR-606 board).
	513	←	○	○	Optical drive's BDC (IC300/DR-606 board) cannot set the SDRAM mode.
	51C	←	○	○	Optical drive's BDC (IC300/DR-606 board) cannot reset free-run by SYS PE (IC700/DR-606 board).
	52C	←	○	○	Auto setting by SYS PE (IC700/DR-606 board) is disabled with power control of optical drive's BDC (IC300/DR-606 board).

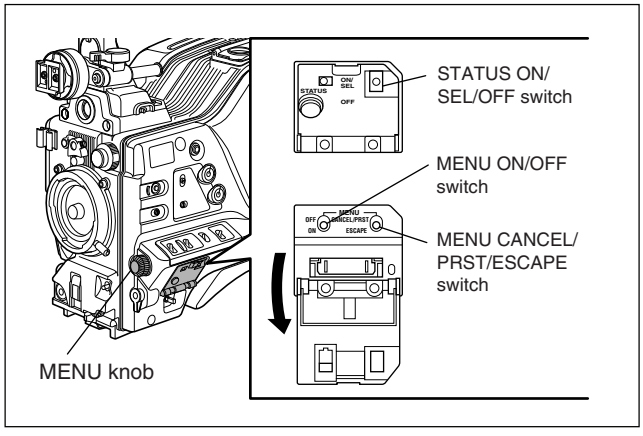
Section 4
Setup Menu

4-1. Setup Menus

The PDW-700 has setup menus for making various settings and adjustments. The setup menus of this unit include the USER menu, USER MENU CUSTOMIZE menu, ALL menu, OPERATION menu, PAINT menu, MAINTENANCE menu, FILE menu, DIAGNOSIS menu and SERVICE menu.
The setup menus are displayed on the viewfinder of this unit.

4-1-1. Basic Operations of Setup Menus

Switch description



MENU ON/OFF switch

Use this switch to display the setup menu. When the lid is closed, the switch is set to the OFF position.
ON : Displays the setup menu.
OFF : Exits the setup menu.

MENU CANCEL/PRST/ESCAPE switch

Use this switch to cancel the setup of the items that are selected by the setup menu, or return to the initial setup when the MENU ON/OFF switch is in the ON position.
CANCEL/PRST : Cancels the executed setup or returns to the initial (PRST) setup.
ESCAPE : Returns to the menu hierarchy one level higher.

STATUS ON/SEL/OFF switch

Use this switch to show or to clear the setup displays in order to confirm various settings and statuses when the MENU ON/OFF switch is in the OFF position.
ON/SEL : Shows the various settings and status check displays for about 10 seconds. Each press of this switch turns over the display page.
OFF : Clears the display that is selected by ON/SEL.

MENU knob

When rotated : Moves to the other pages or items, or changes the setup value.
When pressed : Enters the page set mode or the setup value modification mode.

Operating procedure

1. Set the MENU ON/OFF switch to ON.
2. To move to another page, rotate the MENU knob. (Press the MENU knob to set it.)
3. To move to another item, rotate the MENU knob.

Note

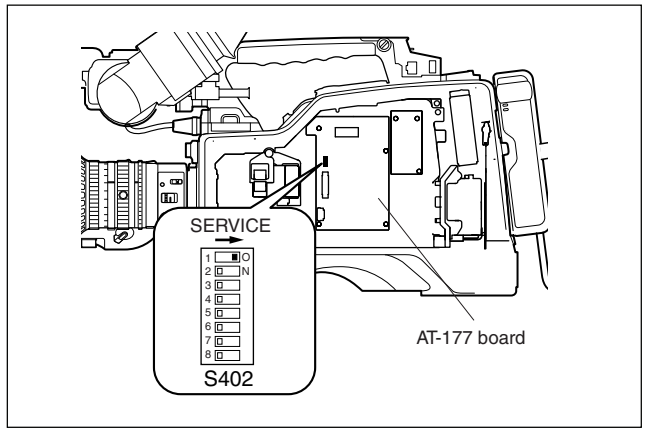
Pressing the MENU knob enters the setup value modification mode.

4. To modify a setup value, rotate the MENU knob.
5. Set the MENU ON/OFF switch to OFF to exit the setup menu.

4-1-2. How to Display the SERVICE Menu

Method 1

Set the switch S402-1/AT-177 board to the ON position.



Method 2

- Select the DIAGNOSIS menu D00 ● CONTENTS page.
- While pressing the MENU knob and the ASSIGN1 switch simultaneously, set the MENU ON/OFF switch from OFF to ON. (However, if the switch S402-2/AT-177 board is set to ON, or if the switch S400/AT-177 board is OFF, this method is disabled).

4-2. TOP Menu

While pressing the MENU knob, set the MENU ON/OFF switch to ON. Then the TOP menu appears. However, the TOP menu is not displayed when the switch S400 (TOP MENU selection)/AT-177 board is in the OFF position.

TOP MENU Display

```
S     <TOP MENU>

→USER
 USER MENU CUSTOMIZE
 ALL
 ·OPERATION
 ·PAINT
 ·MAINTENANCE
 ·FILE
 ·DIAGNOSIS
 SERVICE
```

Menu	Function
USER	Use the USER menu to set the functions that are used for daily routine operations such as MONITOR OUT setting (This menu appears when the MENU ON/OFF switch is set to ON normally)
USER MENU CUSTOMIZE	Use this menu to add or delete the pages that are required for the USER menu to suit operators' needs depending on applications (For more details, refer to "Editing the USER Menu" of Operation Manual)
ALL	The ALL menu contains all pages of each category of the "USER 1" to "USER 19" pages edited by "USER MENU CUSTOMIZE", "ASSIGN ITEM SEL" page, OPERATION, PAINT, MAINTENANCE, FILE and DIAGNOSIS. It means that you can move to any page from the ALL menu without returning to the TOP menu
OPERATION	Usually, the camera operator is expected to use the OPERATION menu to set or change the preference setups to suit the shooting conditions of each object
PAINT	Use this menu to implement fine adjustment of pictures by monitoring the camera output waveform on a waveform monitor etc
MAINTENANCE	This is the camera maintenance menu. Use this menu to set the PAINT items of lower operating frequency or to alter the system configuration
FILE	This is the file operation menu. Use this menu to save data in the REFERENCE file etc
DIAGNOSIS	Use this menu to check the optical drive status or to diagnose the circuit boards that are suspected to have an error
SERVICE	Use this menu for service and maintenance (This menu is enabled when the switch S402-1/AT-177 board is set to ON)

4-3. USER Menu

The USER menu enables the user to use the selected menu items that are frequently used in daily operation. The USER menu contains the following menu items as the default when the unit was shipped from the factory.
Add or delete the menu items as desired with the use of the USER MENU CUSTOMIZE menu.

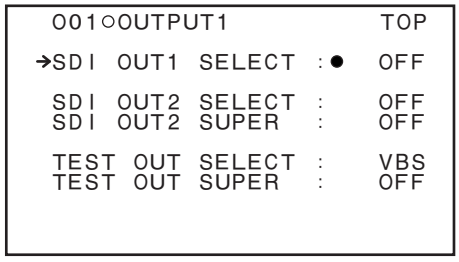
Name of page	Name of category
OUTPUT 1	OPERATION
OUTPUT 2	OPERATION
SUPERIMPOSE	OPERATION
LCD	OPERATION
REC FUNCTION	OPERATION
ASSIGNABLE SW	OPERATION
VF DISP1	OPERATION
VF DISP2	OPERATION
'!' LED	OPERATION
MARKER 1	OPERATION
GAIN SW	OPERATION
VF SETTING	OPERATION
AUTO IRIS	OPERATION
SHOT ID	OPERATION
SHOT DISP	OPERATION
SET STATUS	OPERATION
LENS FILE	OPERATION
USER FILE	FILE

4-4. OPERATION Menu

Note

When the range of setting is surrounded by parenthesis ( ) in the setting column, the setup value is the relative value. The range of setting in parenthesis ( ) can be different from what shown in the manual depending on the setting in the layer lower than this menu.

OUTPUT 1 Display (Setting the Output Signal)

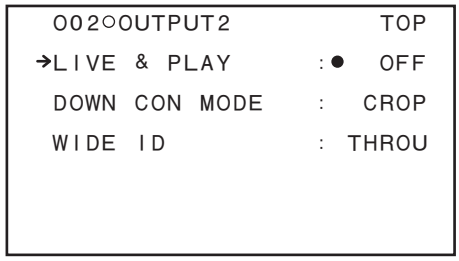


Item	Setting	Function
SDI OUT 1 SELECT	OFF/HDSDI/SDSDI	Selects the output signal from the SDI OUT 1 connector OFF : No output signal HDSDI : HD SDI signal SDSDI : SD SDI signal
SDI OUT 2 SELECT	OFF/HDSDI/SDSDI	Selects the output signal from the SDI OUT 2 connector OFF : No output signal HDSDI : HD SDI signal SDSDI : SD SDI signal
SDI OUT 2 SUPER	OFF/ON	Turns ON/OFF the superimposed information output from the SDI OUT 2 connector
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector (When R/G/B is selected, turning the power ON/OFF changes the setting to Y)
TEST OUT SUPER	OFF/ON	Turns ON/OFF the superimposed information output from the TEST OUT connector

Notes

- When R/G/B is selected, turning the power of the unit off and on changes the setting to Y.
- When TEST OUT SELECT is set to Y/R/G/B, the character information is displayed regardless of the setting. The character information can be hidden by switching this item from ON to OFF while the character information is displayed. (The view finder is also hidden.)
- When TEST OUT SELECT is set to LCD, the character information is displayed or hidden according to the display mode selected with the DISPSEL/EXPAND button.

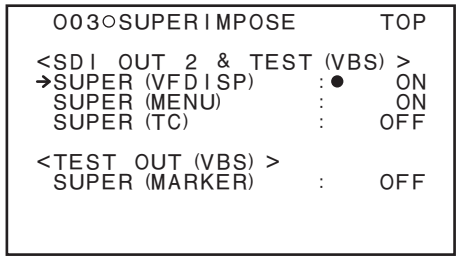
OUTPUT 2 Display (Setting the Output signal)



Item	Setting	Function
LIVE & PLAY	OFF/ON	Enables to view camera video in the viewfinder during playback from the disc OFF : Do not display camera video in the viewfinder during disc playback ON : Output camera video to the viewfinder, even during disc playback
DOWN CON MODE*	CROP/LETTR/SQEZE	Selects the aspect ratio for down-conversion SQEZE : Squeeze Converting the 16:9 HD video signal to the SD signal while maintaining the aspect ratio (16 : 9) LETTR : LETTER BOX Converting the 16 : 9 HD video signal to the 4 : 3 SD video signal while maintaining the original aspect ratio of 16 : 9 (Black bars are displayed on the top and bottom of the screen) LETTR can be selected only when the LETTER BOX is set to ENABLE on the SELECT FUNCTION page CROP : Edge crop Converting the HD video signal to the SD signal by extracting the 4 : 3 image portion from the HD video signal (4 : 3)
WIDE ID	THROU/AUTO	The setting whether or not to add the wide screen information recorded on the disc to the output signal THROU : Outputs the video signal played back from the disc without adding the wide screen information AUTO : Outputs the video signal by adding the wide screen information when the wide information is detected from the disc during playback

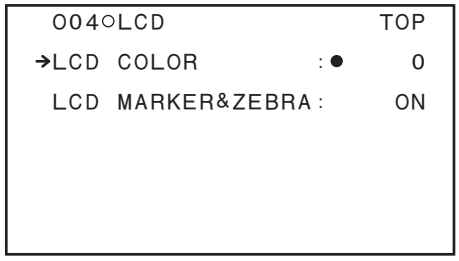
* : When the SYSTEM LINE is 1080, and the SYSTEM FREQUENCY is 23.9P, the menu does not appear and the mode is fixed to SQEZE.

SUPERIMPOSE Display (Setting the information output)



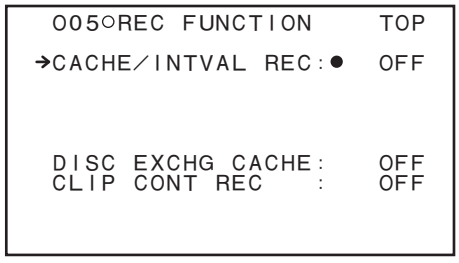
Item	Setting	Function
SUPER(VFDISP)	OFF/ON	Turns ON/OFF the output of text (superimposed) information from the SDI OUT 2 connector
SUPER(MENU)	OFF/ON	
SUPER(TC)	OFF/ON	
SUPER(MARKER)	OFF/ON	Turns ON/OFF the marker display output from the TEST OUT connector

LCD Display (Setting the LCD monitor)



Item	Setting	Function
LCD COLOR	(–99 to 99)	Adjusts the LCD color
LCD MARKER & ZEBRA	OFF/ON	Turns ON/OFF the marker and zebra display in the LCD monitor

REC FUNCTION Display (Setting the Picture cache function)



Item	Setting	Function
CACHE/INTVAL REC	OFF/CACHE/A.INT/M.INT	Sets the CACHE REC function OFF : Not used CACHE : CACHE REC A.INT : Auto interval REC M.INT : Manual interval REC
DISC EXCHG CACHE	OFF/ON	Turns ON/OFF the function that even if you run out of free disc capacity while recording, you can continue recording **Note** The unit's internal memory is not unlimited, so the video and audio may be interrupted if it takes too long to exchange the disc.
CLIP CONT REC	OFF/ON	Turns ON/OFF the clip continuous rec function

When CACHE is selected in CACHE/INTVAL REC

```
  005○REC FUNCTION     TOP

→CACHE/INTVAL REC:●CACHE
 CACHE REC TIME   :  0-2S


 DISC EXCHG CACHE:   OFF
```

Item	Setting	Function
CACHE REC TIME	0-2S/2-4S/4-6S/6-8S/8-10S/ 18-20S/28-30S	Sets the recording time of CACHE REC (SEC : second)

When A.INT is selected in CACHE/INTVAL REC

```
  005○REC FUNCTION     TOP

→CACHE/INTVAL REC:●A.INT
 TAKE TOTAL TIME  :  5MIN
 REC TIME         :  5SEC
 PRE-LIGHTING     :   OFF

 DISC EXCHG CACHE:   OFF
```

Item	Setting	Function
TAKE TOTAL TIME	See the right column	Sets the total recording time of Auto Interval REC (MIN : minute, H : hour) Setting value : 5MIN/10MIN/15MIN/20MIN/30MIN/40MIN/50MIN/1H/ 2H/3H/4H/5H/7H/10H/15H/20H/30H/40H/50H/70H/100H
REC TIME	See the right column	Sets the actual recording time of Auto Interval REC (SEC : second) Setting value : 5, 10, 15, 20, 30, 40, 50SEC, 1 to 85MIN
PRE-LIGHTING	OFF/2SEC/5SEC/ 10SEC	Sets the automatic lighting-on when Auto Interval REC is operating The lighting time (in second) before the start of recording is specified

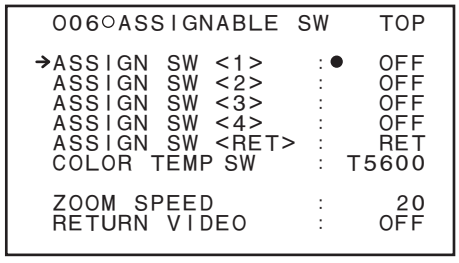
When M.INT is selected in CACHE/INTVAL REC

```
  005○REC FUNCTION     TOP

→CACHE/INTVAL REC:●M.INT
 NUMBER OF FRAME  :     1
 TRIGGER INTERVAL:  1SEC
 PRE-LIGHTING     :   OFF

 DISC EXCHG CACHE:   OFF
```

Item	Setting	Function
NUMBER OF FRAME	1/3/6*1	Sets the number of frames to be recorded by one REC operation of Manual Interval REC
TRIGGER INTERVAL	See the right column	Sets the interval time When “M” is selected, by pressing the REC SW, a specified number of frames will be recorded When a time value is set, being triggered by REC SW, recording of a specified number of frames will be made after every elapse of that time Setting value : M/1SEC to 10SEC/15SEC/20SEC/30SEC/ 40SEC/50SEC/1MIN to 10MIN/15MIN/20MIN/ 30MIN/40MIN/50MIN/1H to 6H/12H/24H
PRE-LIGHTING*2	OFF/2SE/5SEC/ 10SEC	Sets the automatic lighting-on when Manual Interval REC is operating The lighting time (in second) before the start of recording is specified

*1 : When SYSTEM LINE is set to 720 and REC FORMAT is set to HD422/HD420, setting value is 2/6/12, and default setting value is 2.
*2 : This does not appear when TRIGGER INTERVAL is set to M.

ASSIGNABLE SW Display (Setting the ASSIGN SW)


006○ASSIGNABLE SW TOP
→ASSIGN SW <1> :● OFF
ASSIGN SW <2> : OFF
ASSIGN SW <3> : OFF
ASSIGN SW <4> : OFF
ASSIGN SW <RET> : RET
COLOR TEMP SW : T5600
ZOOM SPEED : 20
RETURN VIDEO : OFF

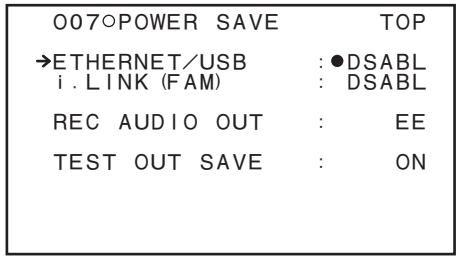
Item	Setting	Function
ASSIGN SW 1/3/4/RET COLOR TEMP SW	OFF	Assigns no function
	FRONT MIC MONO/STEREO	Assigns the function to switch stereo and monaural when the stereo microphone is connected
	PICTURE CACHE ON/OFF	Assigns the function to execute picture cache recording
	SUPER (VFDISP&MENU)	Assigns the function to switch whether or not to combine the character information of the view finder and that of menu with the video signal that is output from the SDI OUT 2 connector or the TEST OUT connector when SDI OUT 2 SUPER or TEST OUT SUPER is set to ON in the OUTPUT 1 page of the OPERATION menu
	MARKER	Assigns the ON/OFF function to display all markers*1
	RE-TAKE*2	Assigns the function to delete the last recorded clip
	ATW	Assigns the ON/OFF function of auto-tracing white balance
	RETURN VIDEO	Assigns the function that displays in the viewfinder the HD-Y (1080i) signal input to the GENLOCK IN connector*3
	LENS RET	Assigns the same function as that of the RET switch on the lens to the switch
	REC SWITCH	Assigns the REC START (recording start) function to the switch
	TURBO SWITCH	Assigns the turbo gain function to the switch
	ZEBRA	Assigns the zebra pattern display function to the switch
	FREEZE MIX	Assigns the function that mixes a still picture (monochrome) and camera video (color) (effective for framing shots)
	COLOR TEMP SW 3200K	Assigns the function to switch the White-balance to 3200K
	COLOR TEMP SW 4300K	Assigns the function to switch the White-balance to 4300K
	COLOR TEMP SW 5600K	Assigns the function to switch the White-balance to 5600K
	COLOR TEMP SW 6300K	Assigns the function to switch the White-balance to 6300K
	ELECTRICAL CC	Assigns the function that switches between electrical CC filters (3200K/4300K/5600K/6300K) whenever pushing the switch The color temperatures of the electrical filter can be changed by the setting ELECTRICAL CC <A> to <D> of the WHITE FILTER page (The positions to which the dash marks ----- are set are skipped) Alternately, color temperatures can be switched in accordance with the settings A/B/C/D from RM/MSU/RCP when a remote control unit is connected
	CC5600K	Applies an electrical 5600K filter
	ZOOM TELE/WIDE*4	When using a serial lens, assign the ZOOM TELE setting to ASSIGN 3, and the WIDE setting to ASSIGN 4
	ZOOM WIDE/TELE*4	When using a serial lens, assign the ZOOM WIDE setting to ASSIGN 3, and the TELE setting to ASSIGN 4
	SHOT MARK1	Assigns the function to record a SHOT MARK 1 essence mark
	SHOT MARK2	Assigns the function to record a SHOT MARK 2 essence mark
	CLIP FLAG OK	Assign the functions that set or clear OK/NG/KEEP flags during recording or playback
	CLIP FLAG NG	
	CLIP FLAG KEEP	

*1 : Even when the MARKER item is set to OFF on the MARKER page of the USER menu, the ASSIGN 1/3/4 switch allows you to display or not to display all markers.
*2 : Cannot be assigned to the RET button of the lens.
*3 : Even if the RETURN VIDEO item is set to OFF on the GENLOCK page of the MAINTENANCE menu, you can use this switch to display the image of the return video signal on the viewfinder.
*4 : Only the Assign 3 SEL and Assign 4 SEL screens appear.

Item	Setting	Function
ASSIGN SW 1/3/4/RET COLOR TEMP SW	FOCUS MAG	Assigns the function that magnifies the central part of the viewfinder picture, for easier focus adjustment (This function does not affect recorded video or other signal output)
	DIGITAL EXTENDER*4	Assigns the function that electronically magnifies the central part of the picture (All video output is magnified, including recorded video)
	CLIP CONT REC	Clip continuous rec function ON/OFF
	UA01 to UA10*1	Assigns the items assigned in the ASSIGN SEL menu
ASSIGN SW 2	OFF	Assigns no function
	FRONT MIC MONO/STEREO	Assigns the function to switch stereo and monaural when the stereo microphone is connected
	PICTURE CACHE ON/OFF	Assigns the function to execute picture cache recording
	SUPER (VFDISP&MENU)	Assigns the function of a switch to select mixing or no mixing of superimposed viewfinder and menu text data into the video signals output from the SDI OUT 2 or TEST OUT connector, when SDI OUT 2 SUPER or TEST OUT SUPER on the OUTPUT 1 page of the OPERATION menu are set to ON
	MARKER	Assigns the ON/OFF function to display all markers*2
	REC VIDEO SOURCE	Switches the recording target video between the video shot by the camera and the video input from an external device (VBS or SD-SDI/HD-SDI)*3
	ZEBRA	Assigns the zebra pattern display function to the switch
	FREEZE MIX	Assigns the function that mixes a still picture (monochrome) and camera video (color) (effective for framing shots)
	DIGITAL EXTENDER*4	Assigns the function that electronically magnifies the central part of the picture (All video output is magnified, including recorded video)
	CLIP CONT REC	Clip continuous rec function ON/OFF
	UA01 to UA10*1	Assigns the items assigned in the ASSIGN SEL menu
ZOOM SPEED	0 to 99	ZOOM SPEED function ON/OFF
RETURN VIDEO	OFF/ON	RETURN VIDEO function ON/OFF

*1 : This does not appear if nothing is assigned in the Assign menu.
*2 : Even when the MARKER item is set to OFF on the MARKER page of the USER menu, the ASSIGN 1/3/4 switch allows you to display or not to display all markers.
*3 : The optional CBK-SC02 Analog Composite Input Board is required for VBS signal input. The optional CBK-HD01 HD/SD SDI Input Board is required for SD-SDI/HD-SDI signal input.
*4 : Video momentarily becomes black and audio is momentarily muted when the DIGITAL EXTENDER is switched ON/OFF.

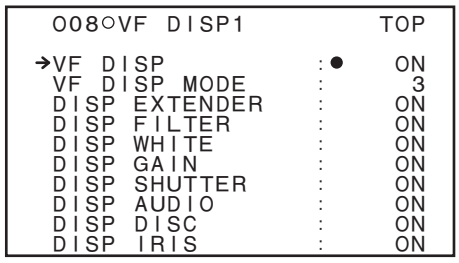
POWER SAVE Display (Setting the POWER SAVE function)



Item	Setting	Function
ETHERNET/USB	DSABL/ENABL	Enables or disables the network connector and USB connector
i.LINK(FAM)*	DSABL/ENABL	Enables or disables the i.LINK connector (FAM function)
REC AUDIO OUT	EE/SAVE	Puts the AUDIO OUT connector in EE or SAVE mode
TEST OUT SAVE	OFF/ON	Switches the TEST OUT connector power saving function on and off ON : No signals are output if a cable is not connected OFF : Signals are always output, regardless of whether a cable is connected

* : The unit must be restarted to enable changes to this setting.

VF DISP 1 Display (Setting the Viewfinder screen displays)


008○VF DISP1 TOP
→VF DISP :● ON
VF DISP MODE : 3
DISP EXTENDER : ON
DISP FILTER : ON
DISP WHITE : ON
DISP GAIN : ON
DISP SHUTTER : ON
DISP AUDIO : ON
DISP DISC : ON
DISP IRIS : ON

Item	Setting	Function
VF DISP	OFF/ON	Turns ON/OFF the Viewfinder display*1
VF DISP MODE	1/2/3	Sets the display mode*2
DISP EXTENDER	OFF/ON	Displays the extender
DISP FILTER	OFF/ON	ND filter type
DISP WHITE	OFF/ON	Displays the white balance memory
DISP GAIN	OFF/ON	Displays the gain setup value
DISP SHUTTER	OFF/ON	Displays the shutter speed and ECS mode indicator
DISP AUDIO	OFF/ON	Displays the audio level
DISP DISC	OFF/ON	Displays the remaining amount of disc
DISP IRIS	OFF/ON	Displays the lens iris value

*1 : The viewfinder display can be also turned on or off by using the DISPLAY of the DISPLAY/ASPECT switch on the viewfinder.
*2 : Regarding the messages that indicate the contents of setup change and the messages that indicate progress/result of adjustments, only a part of the display items can be selected or no display at all can also be selected by setting the display mode.

Correspondence between the conditions of the unit when the message is displayed and the display modes are shown as follows.
○ : Message is displayed.
× : Message is not displayed.

The conditions that necessitate showing of the message	Message	Display mode setting		
		1	2	3
When FILTER selection is changed	FILTER : n (n = 1, 2, 3, 4)	×	×	○
When GAIN setting is changed	GAIN : n (n = –3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 18 dB, 24 dB, 30 dB, 36 dB, 42 dB)	×	×	○
When the WHITE BAL switch setting is changed	WHITE : n (n = A CH, B CH, PRESET) or ATW (Auto Tracking White-balance) : RUN	×	×	○
When the OUTPUT/DCC switch is set to DCC ON or DCC OFF	DCC : ON (or OFF)	×	○	○
When the shutter speed/shutter mode setting is changed*3	: SS : 1/100 (or 1/125, 1/250, 1/500, 1/1000, 1/2000, ECS, EVS)	×	○	○
When BLACK balance/WHITE balance adjustment is in progress	example : WHITE : OK	×	○	○

*3 : It is also displayed for about 3 seconds when the SHUTTER switch is set to ON.

VF DISP 2 Display (Setting the VF displays)

```
  009○VF DISP2          TOP

→DISP ZOOM         :●   ON
 DISP COLOR TEMP   :    OFF
 DISP BATT REMAIN  :    INT
 DISP DC IN        :    OFF
 DISP 16:9/4:3 ID  :    OFF
 DISP WRR RF LVL   :    OFF
 DISP REC FORMAT   :    OFF
 DISP CLIP NO (PB) :    ON
 DISP TIME CODE    :    OFF
 DISP ALAC         :    OFF
```

Item	Setting	Function
DISP ZOOM	OFF/ON	Turns ON/OFF the zoom position display
DISP COLOR TEMP	OFF/ON	Turns ON/OFF the color temperature display
DISP BATT REMAIN*1	INT/VOLT/AUTO	Selects the mode for the remaining battery (or DC IN) voltage display
DISP DC IN	OFF/ON	Turns ON/OFF the display when the power is supplied from the external connector (the battery connected to DC IN)
DISP 16:9/4:3 ID*2	OFF/ON	Displays the video aspect ratio (16:9/4:3)
DISP WRR RF LVL	OFF/ON	Turns ON/OFF the wireless receiver RF level display
DISP REC FORMAT	OFF/ON	Turns ON/OFF the recording format
DISP CLIP NO (PB)	OFF/ON	Turns ON/OFF the clip name
DISP TIME CODE	OFF/ON	Turns ON/OFF the time-code display
DISP ALAC	OFF/ON	Turns ON/OFF the operating status display of ALAC

*1 : When an Anton Bauer battery system or a BP-GL65/GL95 battery pack is installed, the remaining battery power is shown as a percentage value (%) according to the setting of this item.
- INT : When one of the above batteries is installed, the remaining power is shown as a percentage value (%) when there is a change in the value or when the power is low.
- AUTO : The remaining power is shown as a percentage value (%) when one of the above batteries is installed. Otherwise the voltage (VOLT) is displayed continuously.
- VOLT : The voltage (VOLT) is displayed continuously.

*2 : Displayed only when CBKZ-MD01 SD Record and Playback Software is installed.

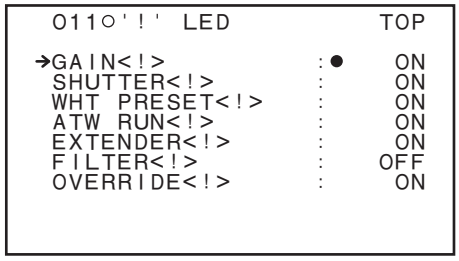
VF DISP 3 Display (Setting the VF displays)

```
  010○VF DISP3          TOP

→LOW LIGHT         :●   OFF
 LOW LIGHT LEVEL   :      0

 VF BATT WARNING   :    10%

 ABSOLUTE VALUE    :    OFF
```

Item	Setting	Function
LOW LIGHT	OFF/ON	Turns ON/OFF the on-screen warning that the average level of the video has dropped beneath a set level
LOW LIGHT LEVEL	(–99 to 99)	Sets the LOW LIGHT threshold value
VF BATT WARNING	10%/20%	Specifies the remaining battery capacity level that starts the flashing warning in the viewfinder
ABSOLUTE VALUE	OFF/ON	Turns ON/OFF the mode that displays numeric menu settings as absolute values*

* : This makes it possible to display settings that include reference settings, stored with STORE ALL PRESET or other functions, as absolute values.

'!' LED Display (Selecting the conditions to turn on the '!' indicator on VF)



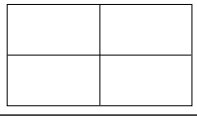
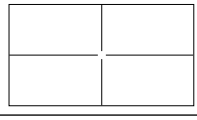
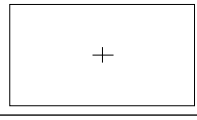
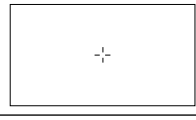
Item	Setting	Function
GAIN <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the GAIN value is other than 0 dB
SHUTTER <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the SHUTTER switch is ON
WHITE PRESET <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the WHITE BAL switch is set to PRST
ATW RUN <!>	OFF/ON	OFF : Does not turn on ON : Turns on when ATW is used
EXTENDER <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the lens extender is used
FILTER <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the filter knob is set to the setting other than ND:1
OVERRIDE <!>	OFF/ON	OFF : Does not turn on ON : Turns on when the reference value of the auto iris is other than the standard value

MARKER 1 Display (Setting the MARKER)

```
  012○MARKER 1          TOP

→MARKER            :●   OFF
 CENTER            :    OFF
 CENTER MARK       :      3
 SAFETY ZONE       :    OFF
 SAFETY AREA       :    90%
 ASPECT            :     ON
 ASPECT SELECT     :    4:3
 ASPECT MASK       :     ON
 ASPECT MASK LVL   :     12
 100%MARKER        :    OFF
```

Item	Setting	Function
MARKER	OFF/ON	Turns ON/OFF all the MARKER display functions
CENTER	OFF/ON	Turns ON/OFF the CENTER MARKER display
CENTER MARK	1/2/3/4	Selects the types of CENTER MARKER when the above CENTER MARKER display is ON*1
SAFETY ZONE	OFF/ON	Turns ON/OFF the SAFETY ZONE MARKER display
SAFETY AREA	80/90/92.5/95%	Selects the ranges of the SAFETY ZONE MARKER display (80%/90%/92.5%/95%)
ASPECT*2	OFF/ON	Turns ON/OFF the ASPECT MARKER display
ASPECT SELECT*2	15 : 9/14 : 9/13 : 9/4 : 3/1.85/2.35	Selects the aspect ratio
ASPECT MASK (4 : 3)*2 *3	OFF/ON	Turns ON/OFF the function to darken the outside of the specified aspect
ASPECT MASK LVL*2	0 to 15	Selects the darkness level of the outside of the specified aspect when ASPECT MASK is ON
100% MARKER	OFF/ON	Selects the MARKER display function to display the 100% (effective picture elements) area

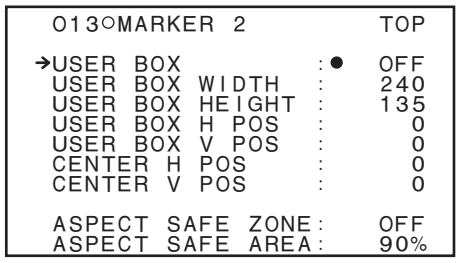
*1 : The CENTER MARKER is displayed as shown below.

Setting	1	2	3	4
VF screen				

*2 : This item is ignored when the recording format is IMX50/40/30 or DVCAM and the aspect ratio is 4:3.

*3 : The ASPECT MASK item is for processing the signal to be output to the viewfinder. When R, G, or B is selected for the TEST OUT SELECT item in the menu, the masked video signal is output to the TEST OUT connector.
ASPECT MASK is ignored for displays in the viewfinder when the following are true.
- TEST OUT SELECT on the OUTPUT 1 page is set to HD-Y, and a cable is connected to the TEST OUT connector
- TEST OUT SELECT on the OUTPUT 1 page is set to HD-Y, and TEST OUT SAVE on the POWER SAVE page is set to OFF

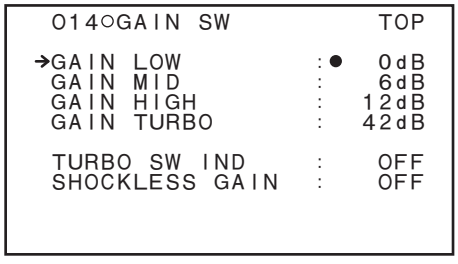
MARKER 2 Display (Setting the MARKER-related items)


O13○MARKER 2 TOP
→USER BOX :● OFF
USER BOX WIDTH : 240
USER BOX HEIGHT : 135
USER BOX H POS : 0
USER BOX V POS : 0
CENTER H POS : 0
CENTER V POS : 0
ASPECT SAFE ZONE: OFF
ASPECT SAFE AREA: 90%

Item	Setting	Function
USER BOX	OFF/ON	Turns ON/OFF the BOX cursor display
USER BOX WIDTH	3 to 479	Sets the horizontal width of the BOX cursor
USER BOX HEIGHT	3 to 269	Sets the vertical width of the BOX cursor
USER BOX H POS	–477 to 476*	Sets the BOX cursor center position (horizontal position)
USER BOX V POS	–267 to 266*	Sets the BOX cursor center position (vertical position)
CENTER H POS	–480 to 479	Sets the CENTER MARKER position (horizontal position)
CENTER V POS	–270 to 269	Sets the CENTER MARKER position (vertical position)
ASPECT SAFE ZONE	OFF/ON	Turns ON/OFF the SAFETY ZONE MARKER display with respect to the ASPECT MARKER
ASPECT SAFE AREA	80%/90%/92.5%/95%	Selects the ranges of the SAFETY ZONE MARKER display with respect to the ASPECT MARKER

* : Range of this setting is different depending upon the above USER BOX WIDTH/HEIGHT setting.

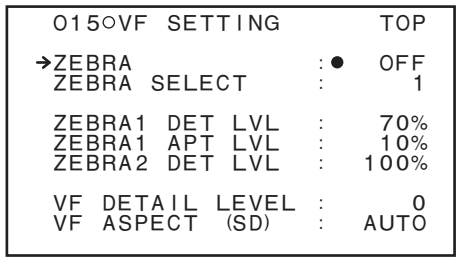
GAIN SW Display (Setting GAIN)



Item	Setting	Function
GAIN LOW	–6/–3/0/3/6/9/12/18/24/30/36/42 dB	Sets the gain value when the GAIN switch is set to the “L” position
GAIN MID	–6/–3/0/3/6/9/12/18/24/30/36/42 dB	Sets the gain value when the GAIN switch is set to the “M” position
GAIN HIGH	–6/–3/0/3/6/9/12/18/24/30/36/42 dB	Sets the gain value when the GAIN switch is set to the “H” position
GAIN TURBO	–6/–3/0/3/6/9/12/18/24/30/36/42 dB	Sets the gain value of the TURBO GAIN switch
TURBO SW IND	OFF/ON	Turns ON/OFF the function that disables L/M/H of the GAIN switch while the TURBO GAIN is being selected
SHOCKLESS GAIN*	OFF/ON	Turns ON/OFF the shockless gain

* : This does not appear when SYSTEM LINE is set to 720, SYSTEM FREQUENCY is set to 59.9P, and SCAN MODE is set to 23.9P.

VF SETTING display (Setting VF)


015○VF SETTING TOP
→ZEBRA : ● OFF
ZEBRA SELECT : 1
ZEBRA1 DET LVL : 70%
ZEBRA1 APT LVL : 10%
ZEBRA2 DET LVL : 100%
VF DETAIL LEVEL : 0
VF ASPECT (SD) : AUTO

Item	Setting	Function
ZEBRA	OFF/ON	Turns ON/OFF all the zebra display*1
ZEBRA SELECT	1/2/BOTH	Selects the zebra pattern type
ZEBRA1 DET LVL	20% to 107%	Sets the ZEBRA1 display level (center value)
ZEBRA1 APT LVL	1% to 20%	Sets the ZEBRA1 aperture level (center value)
ZEBRA2 DET LVL	52% to 109%	Sets the ZEBRA2 display level (lower limit value)
VF DETAIL LEVEL	(–99 to 99)	Sets the amount of details of the VF picture (Details of the main line video output remain unchanged)
VF ASPECT (SD)*2	AUTO/16:9	Specifies whether to set the viewfinder screen and LCD monitor aspect ratio automatically or to set it to 16:9 When “16:9” is selected, then the screen is always displayed as a 16:9 screen (before being cut out to 4:3), even when ASPECT RATIO (SD) is set to “4:3”

*1 : When you use the viewfinder which is not equipped with the ZEBRA switch, turns the display on or off using this item. When you use the viewfinder with the ZEBRA switch, the most recent operation of the ZEBRA switch and this menu operation is effective.

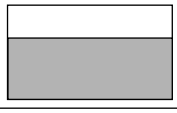
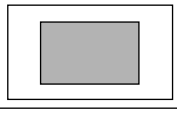
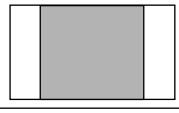
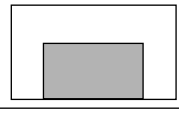
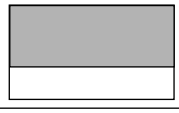
*2 : Displayed only when REC FORMAT is set to IMX50/40/30 or DAVCAM.

AUTO IRIS Display (Setting AUTO IRIS)

```
  016○AUTO IRIS          TOP

→IRIS OVERRIDE    :●    OFF
 IRIS SPEED       :      0
 CLIP HIGH LIGHT  :    OFF

 IRIS WINDOW      :      1
 IRIS WINDOW IND  :    OFF
 IRIS VAR WIDTH   :    240
 IRIS VAR HEIGHT  :    135
 IRIS VAR H POS   :      0
 IRIS VAR V POS   :      0
```

Item	Setting	Function
IRIS OVERRIDE	OFF/ON	Turns ON/OFF the AUTO IRIS OVERRIDE function When set to ON, the reference value of the AUTO IRIS can be changed by the MENU knob (9 steps: −1, −0.75, −0.5, −0.25, 0, +0.25, +0.5, +0.75, +1)
IRIS SPEED	(−99 to 99)	Sets the AUTO IRIS response speed. −99 (Slow) ↔ 99 (Fast)
CLIP HIGH LIGHT	OFF/ON	Turns ON/OFF the function that limits the AUTO IRIS detection level to 100% when the video signal of higher than 100% is input
IRIS WINDOW	1/2/3/4/5/6/VAR	Selects the IRIS WINDOW (detection range)*1 When VAR is selected, the iris window can be set by the IRIS VAR WIDTH/HEIGHT/H POS/V POS as described below
IRIS WINDOW IND	OFF/ON	Turns ON/OFF the function that checks the iris window with the box cursor
IRIS VAR WIDTH	20 to 479	Sets width of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR HEIGHT	20 to 269	Sets height of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR H POS	−460 to 459*2	Sets the center in the horizontal direction of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR V POS	−250 to 249*2	Sets the center in the vertical direction of the iris window when VAR is selected in the above IRIS WINDOW

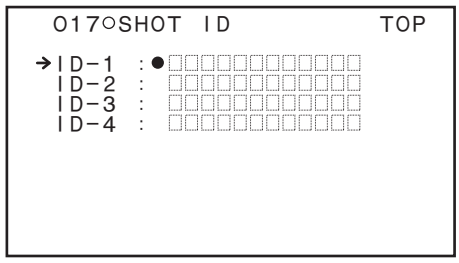
*1 : The IRIS WINDOW is set as shown below.

Setting	1	2	3	4	5	6
VF screen						

Shaded ( ) area : IRIS WINDOW frame

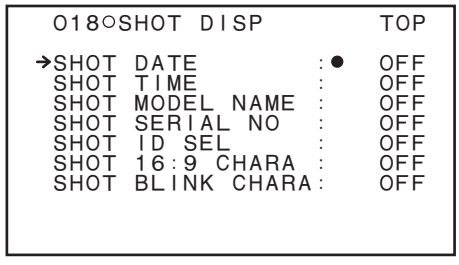
*2 : Range of this setting is different depending upon the above IRIS VAR WIDTH/HEIGHT setting.

SHOT ID Display (Setting SHOT ID)



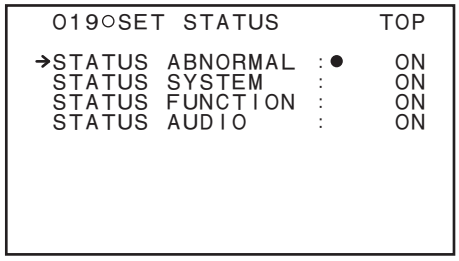
Item	Setting	Function
ID-1	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-1
ID-2	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-2
ID-3	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-3
ID-4	12 characters (alphanumeric characters, symbols and spaces)	Setting SHOT ID-4

SHOT DISP Display (Selecting the shot data to be superimposed on color bar)


018○SHOT DISP TOP
→SHOT DATE :● OFF
SHOT TIME : OFF
SHOT MODEL NAME : OFF
SHOT SERIAL NO : OFF
SHOT ID SEL : OFF
SHOT 16:9 CHARA : OFF
SHOT BLINK CHARA: OFF

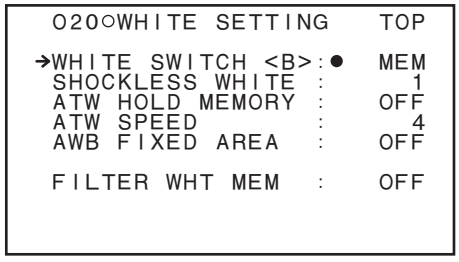
Item	Setting	Function
SHOT DATE	OFF/ON	Turns ON/OFF whether to superimpose and record the date
SHOT TIME	OFF/ON	Turns ON/OFF whether to superimpose and record the time
SHOT MODEL NAME	OFF/ON	Turns ON/OFF whether to superimpose and record the model name of the unit
SHOT SERIAL NO	OFF/ON	Turns ON/OFF whether to superimpose and record the serial number of the unit
SHOT ID SEL	OFF/ID-1/ID-2/ID-3/ID-4	Displays the shot ID number selected in the SHOT ID page
SHOT 16 : 9 CHARA	OFF/ON	Turns ON/OFF whether to superimpose and record 16:9 when the aspect ratio “16:9” is selected
SHOT BLINK CHARA	OFF/ON	Turns ON/OFF whether to superimpose and record the blinking “*”

SET STATUS Display (Selecting the status check screen display)



Item	Setting	Function
STATUS ABNORMAL	OFF/ON	Turns ON/OFF the ABNORMAL <!> screen display
STATUS SYSTEM	OFF/ON	Turns ON/OFF the SYSTEM screen display
STATUS FUNCTION	OFF/ON	Turns ON/OFF the FUNCTION screen display
STATUS AUDIO	OFF/ON	Turns ON/OFF the AUDIO STATUS screen display

WHITE SETTING Display (Indicating the setup status of the various function that are set by the FUNCTION display)


O20○WHITE SETTING TOP
→WHITE SWITCH <B>:● MEM
SHOCKLESS WHITE : 1
ATW HOLD MEMORY : OFF
ATW SPEED : 4
AWB FIXED AREA : OFF
FILTER WHT MEM : OFF

Item	Setting	Function
WHITE SWITCH <B>	MEM/ATW	Sets the operating mode when the WHITE BAL switch is set to the B side MEM : Auto white balance ATW : Auto tracking white balance
SHOCKLESS WHITE	OFF/1/2/3	Sets the transition time when the WHITE BAL switch is changed to a new setting (1 is fastest)
ATW HOLD MEMORY	OFF/ON	Sets whether or not to save the white balance adjustment value in the memory (A/B/C) that corresponds to the WHITE BAL switch position during ATW (The value cannot be saved in the PRESET layer)
ATW SPEED	1/2/3/4/5	Switches the transition speed of auto tracking white balance (ATW) (1 is slowest)
AWB FIXED AREA	OFF/ON	Executes the AWB (auto white balance) at the center of the screen
FILTER WHT MEM	OFF/ON	Sets the memory area for white balance for each position number of the FILTER knob

OFFSET WHT Display (Setting on the offset white function)

```
  021○OFFSET WHT          TOP

→OFFSET WHITE <A>:●   OFF
 WARM-COOL <A>    :    3200
 WARM-COOL BAL<A>:       0

 OFFSET WHITE <B>:    OFF
 WARM-COOL <B>    :    3200
 WARM-COOL BAL<B>:       0
```

Item	Setting	Function
OFFSET WHITE <A>	OFF/ON	Turns ON/OFF the setting to be added to the white balance of A-channel
WARM-COOL <A>	Displays reference color temperature	Sets the offset for the white balance of channel A, using the color temperature
WARM-COOL BAL <A>	(–99 to 99)	Used for the above WARM-COOL fine adjustment (A-CH)
OFFSET WHITE <B>	OFF/ON	Turns ON/OFF the setting to be added to the white balance of B-channel
WARM-COOL <B>	Displays reference color temperature	Sets the offset for the white balance of channel B, using the color temperature
WARM-COOL BAL <B>	(–99 to 99)	Used for the above WARM-COOL fine adjustment (B-CH)

SHT ENABLE Display (Setting the shutter mode/speed that can be selected by the SHUTTER switch etc)

```
  022○SHT ENABLE          TOP

→SHUTTER ECS      :●    ON
 SHUTTER SLS      :     OFF
 SHUTTER 1/60     :     ON
 SHUTTER 1/125    :     ON
 SHUTTER 1/250    :     ON
 SHUTTER 1/500    :     ON
 SHUTTER 1/1000   :     ON
 SHUTTER 1/2000   :     ON
```

FORMAT : 50i/50P

```
  022○SHT ENABLE          TOP

→SHUTTER ECS      :●    ON
 SHUTTER SLS      :     OFF
 SHUTTER 1/100    :     ON
 SHUTTER 1/125    :     ON
 SHUTTER 1/250    :     ON
 SHUTTER 1/500    :     ON
 SHUTTER 1/1000   :     ON
 SHUTTER 1/2000   :     ON
```

FORMAT : 59.9i/59.9P (SCAN MODE 59.9P)

```
  022○SHT ENABLE          TOP

→SHUTTER ECS      :●    ON
 SHUTTER SLS      :     OFF
 SHUTTER 1/33     :     ON
 SHUTTER 1/50     :     ON
 SHUTTER 1/100    :     ON
 SHUTTER 1/125    :     ON
 SHUTTER 1/250    :     ON
 SHUTTER 1/500    :     ON
 SHUTTER 1/1000   :     ON
 SHUTTER 1/2000   :     ON
```

FORMAT : 25P

```
  022○SHT ENABLE          TOP

→SHUTTER ECS      :●    ON
 SHUTTER SLS      :     OFF
 SHUTTER 1/40     :     ON
 SHUTTER 1/60     :     ON
 SHUTTER 1/120    :     ON
 SHUTTER 1/125    :     ON
 SHUTTER 1/250    :     ON
 SHUTTER 1/500    :     ON
 SHUTTER 1/1000   :     ON
 SHUTTER 1/2000   :     ON
```

FORMAT : 29.97P

(Continue to next page)

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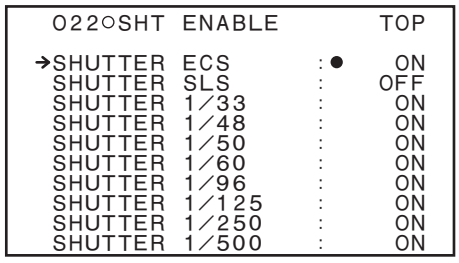
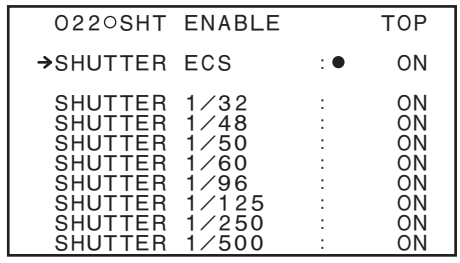
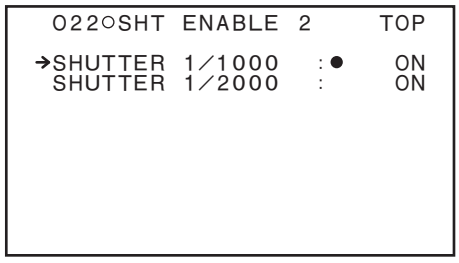

022○SHT ENABLE TOP
→SHUTTER ECS : ● ON
SHUTTER SLS : OFF
SHUTTER 1/33 : ON
SHUTTER 1/48 : ON
SHUTTER 1/50 : ON
SHUTTER 1/60 : ON
SHUTTER 1/96 : ON
SHUTTER 1/125 : ON
SHUTTER 1/250 : ON
SHUTTER 1/500 : ON

FORMAT : 23.9P


022○SHT ENABLE TOP
→SHUTTER ECS : ● ON
SHUTTER 1/32 : ON
SHUTTER 1/48 : ON
SHUTTER 1/50 : ON
SHUTTER 1/60 : ON
SHUTTER 1/96 : ON
SHUTTER 1/125 : ON
SHUTTER 1/250 : ON
SHUTTER 1/500 : ON

FORMAT : 59.9P (SCAN MODE 23.9P)

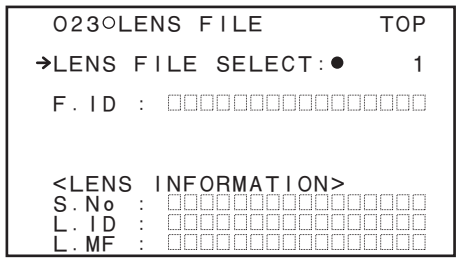


FORMAT : 23.9P/59.9P (SCAN MODE 23.9P)

Item	Setting	Function
SHUTTER ECS	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER SLS*1	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/32*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/33*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/40*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/48*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/50*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/60*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/96*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/100*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/120*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/125*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/250*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/500*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/1000*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit
SHUTTER 1/2000*2	OFF/ON	When set to ON, this item can be selected with the SHUTTER SW on the unit

*1 : This does not appear when FORMAT is set to 59.9P and SCAN MODE is set to 23.9P.
*2 : Displayed items are different by setting in FORMAT display.

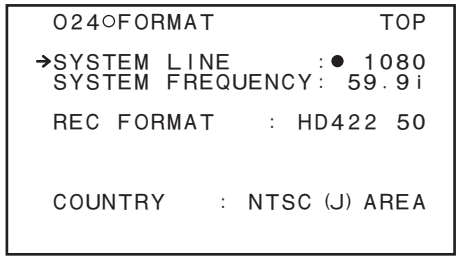
LENS FILE Display (Operating the LENS file)



Item	Setting	Function
LENS FILE SELECT	1 to 32	Selects the LENS file
F.ID	Display only	Displays the file ID of the LENS file that is selected by the above LENS FILE SELECT
S.No	Display only	Displays the serial number of the LENS
L.ID	Display only	Displays the LENS-specific ID
L.MF	Display only	Displays the name of the LENS manufacturer

FORMAT Display (Setting the video format)

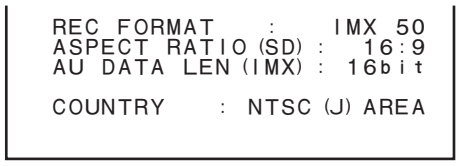
When 1080 is selected in SYSTEM LINE



Item	Setting	Function
SYSTEM LINE*1	1080/720	Sets the format when the power is turned on next time
SYSTEM FREQUENCY*1	59.9i/29.9P/(23.9P)*2 (NTSC AREA) 50i/25P (PAL AREA)	Sets the format when the power is turned on next time
REC FORMAT	See the right column	Sets the recording format Setting value : HD422 50/HD420 HQ/HD420 SP/(IMX 50/ IMX 40/IMX 30/DVCAM) Setting value in ( ) can be selected when CBKZ-MD01 SD Record and Playback Software is installed
COUNTRY*	NTSC(J)AREA/NTSC AREA/ PAL AREA	NTSC(J)AREA : NTSC area (Japan) NTSC AREA : NTSC area (for areas other than Japan) PAL AREA : PAL area

*1 : The unit must be restarted to enable changes to this setting.
*2 : Setting value in ( ) can be selected when CBKZ-FC01 23.98P Record and Playback Software is installed.

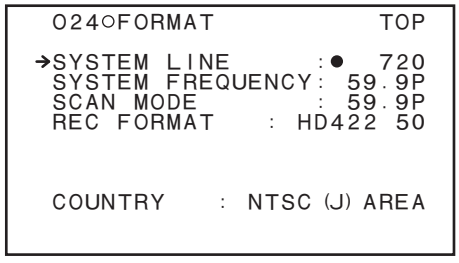
When IMX50/40/30/DVCAM is selected in REC FORMAT



Item	Setting	Function
ASPECT RATIO(SD)	16:9/4:3	Sets the aspect ratio
AU DATA LEN (IMX)*	16bit/24bit	Sets the record format of audio

* : Displayed only when REC FORMAT is set to IMX50/40/30.

When 720 is selected in SYSTEM LINE



Item	Setting	Function
SYSTEM FREQUENCY*1	59.9P (NTSC AREA) 50P (PAL AREA)	Sets the format when the power is turned on next time
SCAN MODE*2	59.9P/23.9P	Sets the camera shooting frequency When SCAN MODE is set to 23.9P, the video output signals and video recording signals of this unit are 59.9 Hz signals after 2-3 pulldown
REC FORMAT	See the right column	Sets the recording format Setting value : HD422 50/HD420 HQ/HD420 SP/(IMX 50/IMX 40/ IMX 30/DVCAM) Setting value in ( ) can be selected when CBKZ-MD01 SD Record and Playback Software is installed (Cannot be selected when SYSTEM LIE is set to 720, and SCAN MODE is set to 23.9P)
COUNTRY*1	NTSC(J)AREA/NTSC AREA /PAL AREA	NTSC(J)AREA : NTSC area (Japan) NTSC AREA : NTSC area (for areas other than Japan) PAL AREA : PAL area

*1 : The unit must be restarted to enable changes to this setting.
*2 : Displayed only when SYSTEM LINE is set to 720 and SYSTEM FREQUENCY is set to 59.9P.

SOURCE SEL Display (Setting to make the front microphone monaural or stereo)

```
 025○SOURCE SEL        TOP
→FRONT MIC SELECT: STREO
 REC VIDEO SOURCE:   CAM
 EXT VIDEO SOURCE: HDSDI
 WIDE MODE (EXT)  :  AUTO
 SETUP REMOVE     :  7.5%
```

Item	Setting	Function
FRONT MIC SELECT	MONO/STREO	Selects MONO/STEREO when stereo microphone is connected
REC VIDEO SOURCE*1	CAM/EXT	Switches the recording target video between the video shot by the camera and the video input from an external device (VBS or SD-SDI/HD-SDI)
EXT VIDEO SOURCE*1	VBS/HDSDI/SDSDI	Selects input signal to be recorded by this equipment, among the input signals supplied from external equipment when EXT is selected by REC VIDEO SOURCE
WIDE MODE(EXT)*1	AUTO/16:9	When the input signal is SD, select the method that determines whether the signal is treated as a wide signal AUTO : When wide picture information is detected in the input signal, treat the signal as a wide signal and set the up-converter operating mode to squeeze mode. Record wide picture information when recording SD. When wide picture information is not detected, set the upconverter operating mode to edge crop mode and do not record wide picture information 16:9 : Always treat the signal as a wide signal and set the upconverter operating mode to squeeze mode. Record wide picture information when recording SD
SETUP REMOVE*2	0.0%/7.5%	Selects whether to modify the setup level of input video signals 7.5% : Remove the setup (Select when signals with 7.5% setup are input) 0.0% : Do not remove the setup (Select when signals without setup are input)

*1 : Displayed only when the CBK-HD01 or CBK-SC02 option board is installed.
*2 : Displayed only when COUNTRY is set to “NTSC(J)AREA” or “NTSC AREA” and the CBK-SC02 option board is installed.

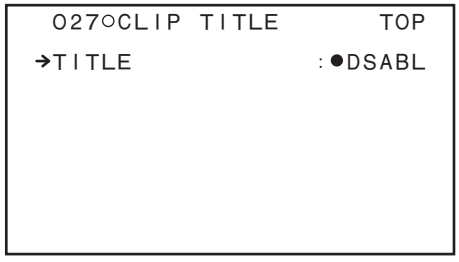
UMID SET Display (Setting the UMID)

```
 026○UMID SET          TOP
→COUNTRY CODE      : □□□□
 ORGANIZATION      : □□□□
 USER CODE         : □□□□
 TIME ZONE :00     :+00:00
```

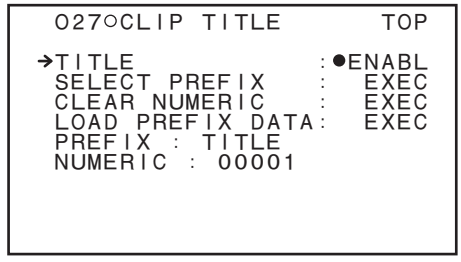
Item	Setting	Function
COUNTRY CODE	4 characters (alphanumeric characters)	Setting the country code
ORGANIZATION	4 characters (alphanumeric characters)	Setting the organization code
USER CODE	4 characters (alphanumeric characters)	Setting the user code
TIME ZONE	00 to 3F	Setting TIME ZONE (time difference)

CLIP TITLE Display (Setting whether to create the clip title)

When the title is selected and set to DSABL

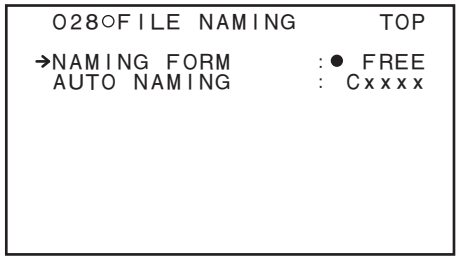


When the title is selected and set to ENABL



Item	Setting	Function
TITLE	DSABL/ENABL	DSABL : Not automatically created ENABL : Sets the clip title to be automatically created when recording
SELECT PREFIX	–	Select from maximum of 20 titles, or enter a prefix
CLEAR NUMERIC	–	Sets the start number of the title name
LOAD PREFIX DATA	–	Loads the file from the memory stick to the unit
PREFIX	TITLE/up to 10 characters	Enters a title prefix
NUMERIC	00001 to 99999	Sets the initial value of the clip title serial

FILE NAMING Display (Assigns the user-defined names to clips and clip lists)

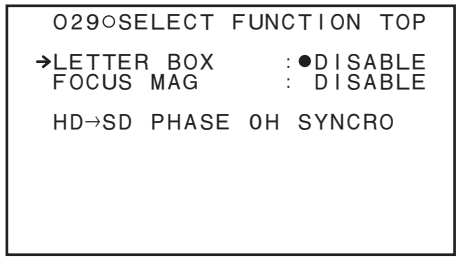


Item	Setting	Function
NAMING FORM	C∗∗∗∗/FREE	Assigns user-defined names to clips and clip lists∗1
AUTO NAMING	C∗∗∗∗/TITLE/PLAN	Assigns clip name on this unit, when the NAMING FORM item is set to “FREE” C∗∗∗∗ : Assigns clip names in the default naming format TITLE : Assigns the name that is given when the title is set to ENABL in the CLIP TITLE page, as the clip name PLAN∗2 :Assigns the title that is described in the readout planning Metadata, as the clip name

∗1 : A user-defined name can be given to the clip list via FAM/FTP.

∗2 : The title display on the VF DISP screen can be switched from Settings of the Disc Menu → Planning Clip Name in Clip Info. Area setting.

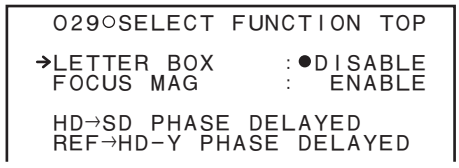
SELECT FUNCTION Display * (LETTER BOX/FOCUS MAG function ENABLE/DISABLE)



* : This does not appear when SYSTEM LINE is set to 1080 and SYSTEM FREQUENCY is set to 23.9P.

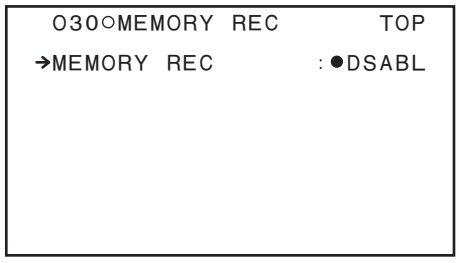
Item	Setting	Function
LETTER BOX	DISABLE/ENABLE	Enable the selection of “LETTR” (LETTER BOX) in the DOWN CON MODE item on the OUTPUT 2 page **Note** Breakup may occur in output signals and in the video and audio of this unit for about 5 to 10 seconds immediately after this setting is changed.
FOCUS MAG	DISABLE/ENABLE	Enable the assignment of the FOCUS MAG function to the ASSIGN switches **Note** Breakup may occur in output signals and in the video and audio of this unit for about 5 to 10 seconds immediately after this setting is changed.
HD → SD PHASE 0H SYNCRO	Display only	Displayed only when LETTER BOX and FOCUS MAG is set to “DISABLE”

When ENABLE is selected in LETTER BOX or FOCUS MAG



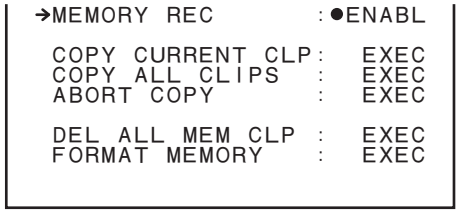
Item	Setting	Function
HD → SD PHASE DELAYED	Display only	Displayed only when LETTER BOX is set to “ENABLE”, or when FOCUS MAG is set to “ENABLE” **Note** In these states, the phases of HD output and SD output from this unit do not match.
REF → HD-Y PHASE DELAYED	Display only	Displayed only when FOCUS MAG is set to “ENABLE” **Note** In this state, the phase of HD-Y output from this unit does not match the phase of the GENLOCK IN signal. When multiple PDW-700 units are daisy chained via this unit inter-system phases do not match.

MEMORY REC Display (Setting the proxy data record function)



Item	Setting	Function
MEMORY REC	DSABL/ENABL	Turns ON/OFF the proxy data record function and the copy function from the disc to the USB memory

When ENABL is selected in MEMORY REC



Item	Setting	Function
COPY CURRENT CLP*	Press the MENU knob to execute this menu item	Copies a proxy data clip on the disc to the USB memory
COPY ALL CLIPS*	Press the MENU knob to execute this menu item	Copies all of the proxy data clips on the disc to the USB memory
ABORT COPY*	Press the MENU knob to execute this menu item	Stops copying to the USB memory
DEL ALL MEM CLP*	Press the MENU knob to execute this menu item	Deletes the saved proxy data
FORMAT MEMORY*	Press the MENU knob to execute this menu item	Formats the USB memory

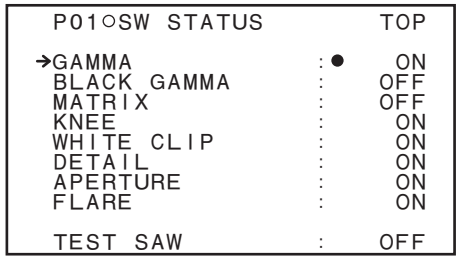
* : Executable only when ETHERNET/USB is set to ENABL.

4-5. PAINT Menu

Note

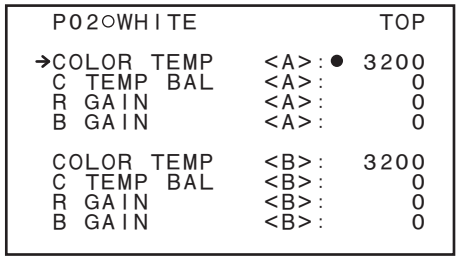
When the range of setting is surrounded by parenthesis ( ) in the setting column, the setup value is the relative value. The range of setting in parenthesis ( ) can be different from what shown in the manual depending on the setting in the layer lower than this menu.

SW STATUS Display (Turns ON/OFF the PAINT related functions)



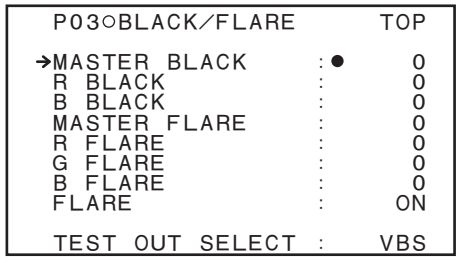
Item	Setting	Function
GAMMA	OFF/ON	Turns ON/OFF the gamma correction function
BLACK GAMMA	OFF/ON	Turns ON/OFF the black gamma correction function
MATRIX	OFF/ON	Turns ON/OFF all of the matrix correction functions
KNEE	OFF/ON	Turns ON/OFF the knee correction function
WHITE CLIP	OFF/ON	Turns ON/OFF the white clip correction function
DETAIL	OFF/ON	Turns ON/OFF the function that adds the detail signal to the video signal to improve resolution power
APERTURE	OFF/ON	Turns ON/OFF the aperture correction function
FLARE	OFF/ON	Turns ON/OFF the flare correction function
TEST SAW	OFF/ON	Turns ON/OFF the test signal correction function

WHITE Display (Setting color temperature at WHITE A/B)



Item	Setting	Function
COLOR TEMP <A>	Displays the color temperature (Guideline)	Sets the value that is close to the color temperature of your preference (WHITE A) (The displayed value is a guideline) Reference : The R GAIN and B GAIN values also change accordingly at the same time When data of the color temperature display is more than 100000K, ****** appears
C TEMP BAL <A>	(–99 to 99)	Uses this item for fine adjustment when the optimum color cannot be obtained by the above COLOR TEMP <A ch> Reference : The R GAIN and B GAIN values also change accordingly at the same time
R GAIN <A>	(–99 to 99)	Uses this item when you want to adjust the color temperature by changing the R GAIN <A ch>
B GAIN <A>	(–99 to 99)	Uses this item when you want to adjust the color temperature by changing the B GAIN <A ch>
COLOR TEMP <B>	Displays the color temperature (Guideline)	Sets the value that is close to the color temperature of your preference <B ch> (The displayed value is a guideline) Reference : The R GAIN and B GAIN values also change accordingly at the same time When data of the color temperature display is more than 100000K, ****** appears
C TEMP BAL <B>	(–99 to 99)	Uses this item for fine adjustment when the optimum color cannot be obtained by the above COLOR TEMP <B ch> Reference : The R GAIN and B GAIN values also change accordingly at the same time
R GAIN <B>	(–99 to 99)	Uses this item when you want to adjust the color temperature by changing the R GAIN <B ch>
B GAIN <B>	(–99 to 99)	Uses this item when you want to adjust the color temperature by changing the B GAIN <B ch>

BLACK/FLARE Display (Adjusting black/flare)



Item	Setting	Function
MASTER BLACK	(–99 to 99)	Adjusts the master black level (All of the R, G and B black levels are adjusted)
R BLACK	(–99 to 99)	Adjusts the R black level
B BLACK	(–99 to 99)	Adjusts the B black level
MASTER FLARE	(–99 to 99)	Adjusts the master flare compensation level (All of the R, G and B flare compensation levels are adjusted)
R FLARE	(–99 to 99)	Adjusts the R flare compensation level
G FLARE	(–99 to 99)	Adjusts the G flare compensation level
B FLARE	(–99 to 99)	Adjusts the B flare compensation level
FLARE	OFF/ON	Turns ON/OFF the flare compensation function
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector

GAMMA Display (Adjusting gamma)

```
  P04○GAMMA                TOP

→GAMMA              :●     ON
  STEP GAMMA        :    0.45
  MASTER GAMMA      :       0
  R GAMMA           :       0
  G GAMMA           :       0
  B GAMMA           :       0
  TEST OUT SELECT   :     VBS
  GAMMA TABLE       :     STD
  GAM TABLE  (STD)  :       5
                     ITU-R709
```

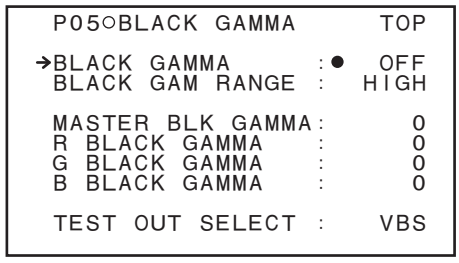
Item	Setting	Function
GAMMA	OFF/ON	Turns ON/OFF the gamma correction function
STEP GAMMA	0.35 to 0.90 (0.05 step)	Sets the master gamma correction curve for each step
MASTER GAMMA	(–99 to 99)	Adjusts the master gamma correction curve
R GAMMA	(–99 to 99)	Adjusts the R gamma correction curve
G GAMMA	(–99 to 99)	Adjusts the G gamma correction curve
B GAMMA	(–99 to 99)	Adjusts the B gamma correction curve
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector
GAMMA TABLE	STD/HG	Selects the gamma type STD : Standard gamma HG : Hyper gamma
GAM TABLE (STD)	1 to 6	Selects the standard gamma type 1 : Corresponds to SD camcorder 2 : x 4.5 gain 3 : x 3.5 gain 4 : Corresponds to SMPTE-240M 5 : Corresponds to ITU-R709 6 : x 5.0 gain

When HG is selected in GAMMA TABLE

```
  GAMMA TABLE       :      HG
  GAM TABLE  (HG)   :       4
                     HG4609
```

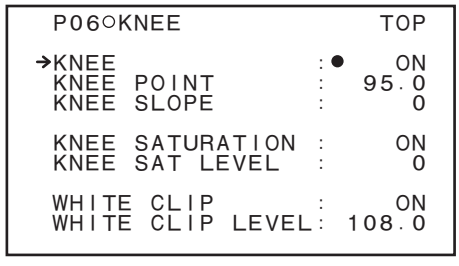
Item	Setting	Function
GAM TABLE (HG)	1 to 4	Selects the hyper gamma type 1 : 325% → 100% 2 : 460% → 100% 3 : 325% → 109% 4 : 460% → 109%

BLACK GAMMA Display (Adjusting black gamma)


P05○BLACK GAMMA TOP
→BLACK GAMMA :● OFF
BLACK GAM RANGE : HIGH
MASTER BLK GAMMA: 0
R BLACK GAMMA : 0
G BLACK GAMMA : 0
B BLACK GAMMA : 0
TEST OUT SELECT : VBS

Item	Setting	Function
BLACK GAMMA	OFF/ON	Turns ON/OFF the black gamma correction function
BLACK GAM RANGE	LOW/L.MID/H.MID/HIGH	Sets the range in which the black gamma correction is effective LOW : 0 to 3.6 % L.MID : 0 to 7.2 % H.MID : 0 to 14.4 % HIGH : 0 to 28.8 %
MASTER BLK GAMMA	(–99 to 99)	Adjusts the master black gamma correction curve (All of the R, G and B black gamma are adjusted)
R BLACK GAMMA	(–99 to 99)	Adjusts the R black gamma correction curve
G BLACK GAMMA	(–99 to 99)	Adjusts the G black gamma correction curve
B BLACK GAMMA	(–99 to 99)	Adjusts the B black gamma correction curve
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector

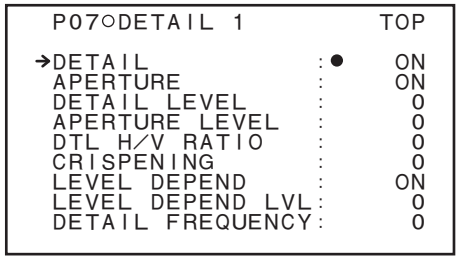
KNEE Display (Adjusting knee)



Item	Setting	Function
KNEE	OFF/ON	Turns ON/OFF the knee correction function
KNEE POINT	50 to 109.0 (0.1 step)	Adjusts the master knee point level during the manual knee adjustment
KNEE SLOPE	(–99 to 99)	Adjusts the master knee slope level during the manual knee adjustment
KNEE SATURATION	OFF/ON	Turns ON/OFF the knee saturation function
KNEE SAT LEVEL	(–99 to 99)	Adjusts the knee saturation level
WHITE CLIP	OFF/ON	Turns ON/OFF the white clip function (used during the video signal adjustment) Note : The video level that is higher than 109% is not output even if this setting is set to OFF.
WHITE CLIP LEVEL	90.0 to 109.0* (0.1 step)	Set the master white clip level

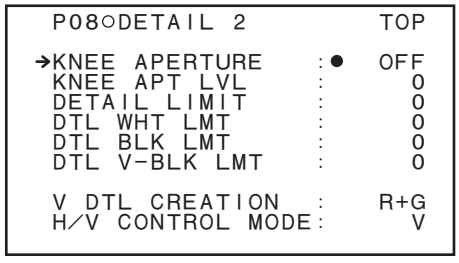
* : Default setting value is 108.0% when COUNTRY is set to “NTSC(J)AREA” or “NTSC AREA”, 105.0% when COUNTRY is set to “PAL AREA”.

DETAIL 1 Display (Adjusting-1 DETAIL)



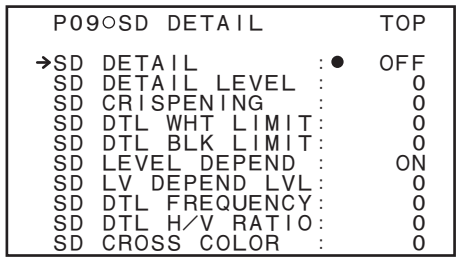
Item	Setting	Function
DETAIL	OFF/ON	Turns ON/OFF the detail signal
APERTURE	OFF/ON	Turns ON/OFF the aperture correction function
DETAIL LEVEL	(–99 to 99)	Sets the overall detail signal level
APERTURE LEVEL	(–99 to 99)	Sets the aperture correction level
DTL H/V RATIO	(–99 to 99)	Sets the V. detail signal level only
CRISPENING	(–99 to 99)	Sets the range of video signal amplitude to which the detail signal is crispening
LEVEL DEPEND	OFF/ON	Turns ON/OFF the level depend function (This function decreases the amount of detail signal when the video signal amplitude is small)
LEVEL DEPEND LVL	(–99 to 99)	Sets the range of video signal amplitude that is suppressed by the level depend
DETAIL FREQUENCY	(–99 to 99)	Sets the frequency (thickness) of the H. detail signal

DETAIL 2 Display (Adjusting-2 DETAIL)


P08○DETAIL 2 TOP
→KNEE APERTURE : ● OFF
KNEE APT LVL : 0
DETAIL LIMIT : 0
DTL WHT LMT : 0
DTL BLK LMT : 0
DTL V-BLK LMT : 0
V DTL CREATION : R+G
H/V CONTROL MODE : V

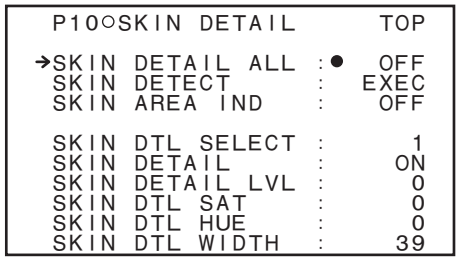
Item	Setting	Function
KNEE APERTURE	OFF/ON	Turns ON/OFF the knee aperture function (This function controls the amount of the detail signal that is added to the highlight signal higher than the knee point)
KNEE APT LVL	(–99 to 99)	Adjusts the amount of the detail signal that is added to the highlight signal higher than the knee point
DETAIL LIMIT	(–99 to 99)	Sets the both detail black and white limiters
DTL WHT LMT	(–99 to 99)	Limits the white peak of the detail signal
DTL BLK LMT	(–99 to 99)	Limits the black peak of the detail signal
DTL V-BLK LMT	(–99 to 99)	Limits the black peak of the V. detail signal
V DTL CREATION	NAM/ G/ R+G/ Y	Selects the source signal of the V. detail signal
H/V CONTROL MODE	H/V / V	Selects an operation mode of DETAIL H/V RATIO on the DETAIL 1 page H/V : Increase/decrease volume for H and V moves in the opposite manner V : Controls V DTL

SD DETAIL Display (Adjusting DETAIL of SD)


P09○SD DETAIL TOP
→SD DETAIL :● OFF
SD DETAIL LEVEL : 0
SD CRISPENING : 0
SD DTL WHT LIMIT: 0
SD DTL BLK LIMIT: 0
SD LEVEL DEPEND : ON
SD LV DEPEND LVL: 0
SD DTL FREQUENCY: 0
SD DTL H/V RATIO: 0
SD CROSS COLOR : 0

Item	Setting	Function
SD DETAIL	OFF/ON	Turns ON/OFF the SD detail correction function
SD DETAIL LEVEL	(–99 to 99)	Sets the overall SD detail signal level
SD CRISPENING	(–99 to 99)	Sets the SD crispening level
SD DTL WHT LIMIT	(–99 to 99)	Limits the white peak of the SD detail signal
SD DTL BLK LIMIT	(–99 to 99)	Limits the black peak of the SD detail signal
SD LEVEL DEPEND	OFF/ON	Turns ON/OFF the level depend function (This function decreases the amount of detail signal when the video signal amplitude is small)
SD LV DEPEND LVL	(–99 to 99)	Sets the range of video signal amplitude that is suppressed by the level depend
SD DTL FREQUENCY	(–99 to 99)	Sets the frequency (thickness) of the H. SD detail signal
SD DTL H/V RATIO	(–99 to 99)	Sets the SD V. detail signal level only
SD CROSS COLOR	(–99 to 99)	Sets the SD cross-color reduction level (When NTSC(J)AREA or NTSC AREA is selected on the FORMAT)

SKIN DETAIL Display (Controlling DETAIL of specific color such as skin tone)


P10○SKIN DETAIL TOP
→SKIN DETAIL ALL :● OFF
SKIN DETECT : EXEC
SKIN AREA IND : OFF
SKIN DTL SELECT : 1
SKIN DETAIL : ON
SKIN DETAIL LVL : 0
SKIN DTL SAT : 0
SKIN DTL HUE : 0
SKIN DTL WIDTH : 39

Item	Setting	Function
SKIN DETAIL ALL	OFF/ON	Turns ON/OFF the skin detail function
SKIN DETECT	Moves to color detection page	Automatic color detection function Move the cursor to the desired object color and press the MENU knob. Then the SKIN DTL SAT. and the SKIN DTL HUE will be set automatically
SKIN AREA IND	OFF/ON	Turns ON/OFF the zebra display to the target area
SKIN DTL SELECT	1/2/3	Selects the skin detail BANK (When BANK is switched, the lower 5 lines of display are switched at the same time)
SKIN DETAIL	OFF/ON	Turns ON/OFF skin detail CH1/2/3 individually The ON/OFF settings can be set for each selection of SKIN DTL SELECT above (three settings)
SKIN DETAIL LVL	(–99 to 99)	Sets the skin detail signal level (Increasing this value increases the skin detail signal amplitude) This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT
SKIN DTL SAT	(–99 to 99)	Sets the range of (saturation) of chroma signal in which the skin detail signal is effective This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT
SKIN DTL HUE	0 to 359	Sets the center phase of the chroma phase (HUE) in which the skin detail functions (Unit : Degrees) This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT
SKIN DTL WIDTH	0 to 359	Sets the width of the chroma phase (HUE) in which the skin detail functions (Unit : Degrees) This item can be set to each BANK (3 different settings) of the above SKIN DTL SELECT

MTX LINEAR Display (Setting user-set matrix)

```
  P11○MTX LINEAR          TOP

→MATRIX                :●  OFF
 MATRIX (USER)         :   OFF
 MATRIX (PRESET)       :    ON
 MATRIX (PRST) SEL     :     2
 MATRIX (USER)  R-G    :     0
 MATRIX (USER)  R-B    :     0
 MATRIX (USER)  G-R    :     0
 MATRIX (USER)  G-B    :     0
 MATRIX (USER)  B-R    :     0
 MATRIX (USER)  B-G    :     0
```

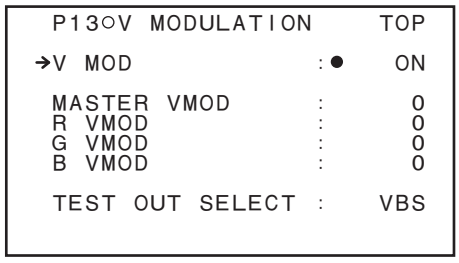
Item	Setting	Function
MATRIX	OFF/ON	Turns ON/OFF the linear matrix and user-set matrix functions
MATRIX (USER)	OFF/ON	Turns ON/OFF the user-set linear matrix function
MATRIX (PRESET)	OFF/ON	Turns ON/OFF the preset matrix function
MATRIX (PRST) SEL	1/2/3/4/5/6	Selects the preset matrix 1 : equivalent to SMPTE 240M 2 : equivalent to ITU-709 3 : equivalent to SMPTE WIDE 4 : equivalent to NTSC 5 : equivalent to EBU 6 : equivalent to ITU-601
MATRIX (USER) R-G	(–99 to 99)	Sets the R-G user-set matrix coefficients
MATRIX (USER) R-B	(–99 to 99)	Sets the R-B user-set matrix coefficients
MATRIX (USER) G-R	(–99 to 99)	Sets the G-R user-set matrix coefficients
MATRIX (USER) G-B	(–99 to 99)	Sets the G-B user-set matrix coefficients
MATRIX (USER) B-R	(–99 to 99)	Sets the B-R user-set matrix coefficients
MATRIX (USER) B-G	(–99 to 99)	Sets the B-G user-set matrix coefficients

MTX MULTI Display (Setting multi matrix)

```
  P12○MTX MULTI           TOP

→MATRIX                :●  OFF
 MATRIX (MULTI)        :   OFF

 MATRIX AREA IND       :   OFF
 MATRIX COLOR DET      :  EXEC

 MTX (MULTI) PRESET    :  EXEC
 MTX (MULTI) AXIS      :     B
 MTX (MULTI) HUE       :     0
 MTX (MULTI) SAT       :     0
```

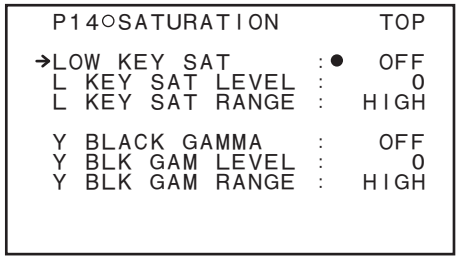
Item	Setting	Function
MATRIX	OFF/ON	Turns ON/OFF the linear matrix and multi matrix correction functions
MATRIX (MULTI)	OFF/ON	Turns ON/OFF the multi matrix function
MTRIX AREA IND	OFF/ON	Turns ON/OFF the function that shows the zebra pattern indicating the detecting region of the multi matrix correction, inside VF
MTRIX COLOR DET	Press the MENU knob to execute this menu item	Automatic color detection function Move the cursor to the desired object color and press the MENU knob Then the MTX (MULTI) AXIS will be set automatically
MTX (MULTI) PRESET	Press the MENU knob to execute this menu item	Return MTX (MULTI) HUE and MTX (MULTI) SAT values to preset values for each of the 16 axes
MTX (MULTI) AXIS	B/B+/MG–/MG/MG+/ R/R+/YL–/YL+/ G–/G/G+/CY/CY+/B–	Sets the chroma phase for the sixteen axes that are the target of the multi matrix correction function
MTX (MULTI) HUE	(–99 to 99)	Adjusts the chroma phase (HUE) of the multi matrix correction (every sixteen axis)
MTX (MULTI) SAT	(–99 to 99)	Adjusts the saturation (SAT) of the multi matrix correction (every sixteen axis)

V MODULATION Display (Adjusting Temporary WHITE V SAW SHADING for LENS)



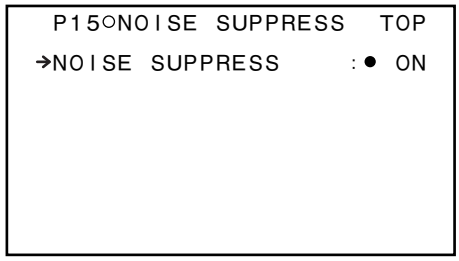
Item	Setting	Function
V MOD	OFF/ON	Turns ON/OFF the V. modulation function
MASTER VMOD	(–99 to 99)	Adjusts amount of the master V. modulation correction (All of the R, G and B V. modulation corrections are controlled)
R VMOD	(–99 to 99)	Adjusts amount of the R V. modulation correction
G VMOD	(–99 to 99)	Adjusts amount of the G V. modulation correction
B VMOD	(–99 to 99)	Adjusts amount of the B V. modulation correction
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector

SATURATION Display (Setting the saturation)


P14○SATURATION TOP
→LOW KEY SAT :● OFF
L KEY SAT LEVEL : 0
L KEY SAT RANGE : HIGH
Y BLACK GAMMA : OFF
Y BLK GAM LEVEL : 0
Y BLK GAM RANGE : HIGH

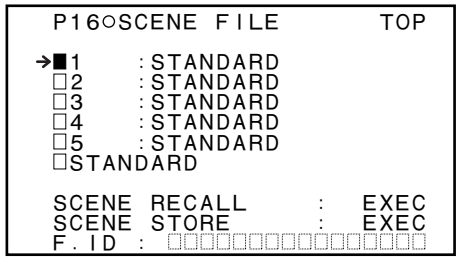
Item	Setting	Function
LOW KEY SAT	OFF/ON	Turns ON/OFF the low key saturation function
L KEY SAT LEVEL	(–99 to 99)	Sets the saturation level of low luminance part
L KEY SAT RANGE	LOW/L.MID/ H.MID/HIGH	Sets the range of video signal in which the low key saturation correction is effective LOW : 0 to 3.6 % L.MID : 0 to 7.2 % H.MID : 0 to 14.4 % HIGH : 0 to 28.8 %
Y BLACK GAMMA	OFF/ON	Turns ON/OFF the Y black gamma correction function
Y BLK GAM LEVEL	(–99 to 99)	Adjust the gamma curve in the low luminance part
Y BLK GAM RANGE	LOW/L.MID/ H.MID/HIGH	Sets the range of video signal in which the Y black gamma correction is effective LOW : 0 to 3.6 % L.MID : 0 to 7.2 % H.MID : 0 to 14.4 % HIGH : 0 to 28.8 %

NOISE SUPPRESS Display (Setting the noise suppresser function)



Item	Setting	Function
NOISE SUPPRESS	OFF/ON	Turn ON/OFF the noise suppresser function

SCENE FILE Display (Operating the SCENE file)



Item	Setting	Function
1 to 5	STANDARD	Recalls the scene file saved in the memory of the camcorder*
STANDARD	–	Selects whether to clear all current detail-adjusted settings and switch settings and returns the settings to the standard settings saved in the reference file
SCENE RECALL	–	Calls the SCENE file from the main unit or Memory Stick
SCENE STORE	–	Save the SCENE file to the main unit or Memory Stick
F.ID	16 characters (alphanumeric characters, symbols and spaces)	Sets the file ID (When the SCENE file is stored, the file ID is saved)

* : Refer to “4-7. FILE Menu” for the file selection display.

4-6. MAINTENANCE Menu

Note

When the range of setting is surrounded by parenthesis ( ) in the setting column, the setup value is the relative value. The range of setting in parenthesis ( ) can be different from what shown in the manual depending on the setting in the layer lower than this menu.

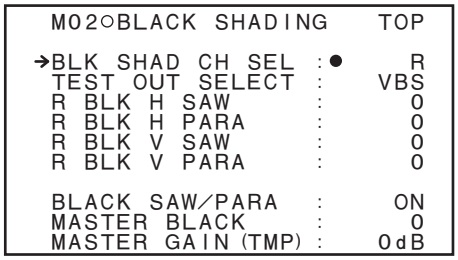
WHITE SHADING Display (Adjusting white shading)

```
  M01○WHITE SHADING    TOP

→WHT SHAD CH SEL  :●     R
 TEST OUT SELECT  :     VBS
 R WHT H SAW      :       0
 R WHT H PARA     :       0
 R WHT V SAW      :       0
 R WHT V PARA     :       0

 WHITE SAW/PARA   :      ON
```

Item	Setting	Function
WHT SHAD CH SEL	R/G/B/TEST*	Selects the channel of shading correction
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector
R WHT H SAW (R/G/B)	(–99 to 99)	Adjusts the H SAW white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL **Note** It cannot be changed during the service mode.
R WHT H PARA (R/G/B)	(–99 to 99)	Adjusts the H PARA white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL **Note** It cannot be changed during the service mode.
R WHT V SAW (R/G/B)	(–99 to 99)	Adjusts the V SAW white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL **Note** It cannot be changed during the service mode.
R WHT V PARA (R/G/B)	(–99 to 99)	Adjusts the V PARA white shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL **Note** It cannot be changed during the service mode.
WHITE SAW/PARA	OFF/ON	Turns ON/OFF the white shading SAW/PARA compensation

* : When TEST is set, the channels switch in relation with TEST OUT SELECT.

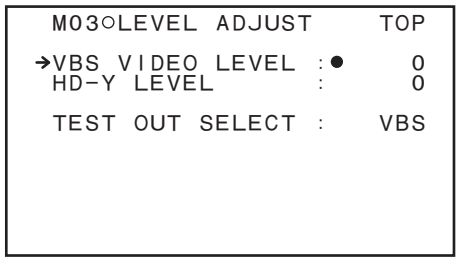
BLACK SHADING Display (Adjusting black shading)


M02○BLACK SHADING TOP
→BLK SHAD CH SEL : ● R
TEST OUT SELECT : VBS
R BLK H SAW : 0
R BLK H PARA : 0
R BLK V SAW : 0
R BLK V PARA : 0
BLACK SAW/PARA : ON
MASTER BLACK : 0
MASTER GAIN(TMP) : 0dB

Item	Setting	Function
BLK SHAD CH SEL	R/G/B/TEST*	Selects the channel of black shading correction
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector
R BLK H SAW (R/G/B)	(–99 to 99)	Adjusts the H SAW black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
R BLK H PARA (R/G/B)	(–99 to 99)	Adjusts the H PARA black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
R BLK V SAW (R/G/B)	(–99 to 99)	Adjusts the V SAW black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
R BLK V PARA (R/G/B)	(–99 to 99)	Adjusts the V PARA black shading correction The R, G and B displays are switched in accordance with the channel selection implemented by the above SHADING CH SEL
BLACK SAW/PARA	OFF/ON	Turns ON/OFF the black shading SAW/PARA compensation
MASTER BLACK	(–99 to 99)	Adjusts the master black level (All of the R, G and B signal black levels are adjusted)
MASTER GAIN (TMP)	–6/–3/0/3/6/9/12/18/24/30/36/42 dB	Sets the temporary master gain

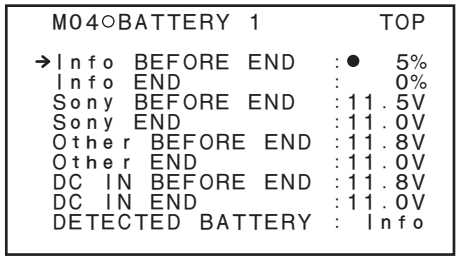
* : When TEST is set, the channels switch in relation with TEST OUT SELECT.

LEVEL ADJUST Display (Adjusting output signal level)



Item	Setting	Function
VBS VIDEO LEVEL	(–99 to 99)	Adjusts the composite signal video level
HD-Y LEVEL	(–99 to 99)	Adjusts the Y level of the HD component signal
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector

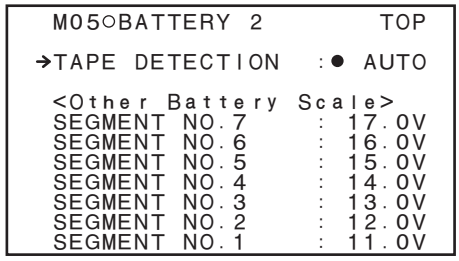
BATTERY 1 Display (Setting-1 the battery-related items)



Item	Setting	Function
Info BEFORE END	5% to 100% (5% steps)	Used when a BP-GL65/GL95 Battery Pack is used. Sets the remaining power (% value) of the battery at which the BEFORE END warning should be issued*1
Info END	0%/1%/2%/3%/4%/5%	Used when a BP-GL65/GL95 Battery Pack is used. Sets the remaining power (% value) of the battery at which the END warning should be issued*2
Sony BEFORE END	11.5 to 17.0 V (0.1V steps)	Used when a BP-L60S/L80S Battery Pack is used. Sets the voltage level of the battery at which the BEFORE END warning should be issued*1
Sony END	11.0 to 11.5 V (0.1V steps)	Used when a BP-L60S/L80S Battery Pack is used. Sets the voltage level of the battery at which the END warning should be issued*2
Other BEFORE END	11.5 to 17.0 V (0.1V steps)	Used when a battery pack other than a Sony battery pack is used. Sets the voltage level of the battery at which the BEFORE END warning should be issued
Other END	11.0 to 14.0 V (0.1V steps)	Used when a battery pack other than a Sony battery pack is used. Sets the voltage level of the battery at which the END warning should be issued
DC IN BEFORE END	11.5 to 17.0 V (0.1V steps)	Used when an external power source is connected to the DC IN connector Sets the voltage level of the connected external power source at which the BEFORE END warning should be issued
DC IN END	11.0 to 14.0 V (0.1V steps)	Used when an external power source is connected to the DC IN connector Sets the voltage level of the connected external power source at which the END warning should be issued
DETECTED BATTERY	Info/Sony/Other/DC IN	Displays the type of automatically detected battery

*1 : The setting of this item is overridden by the setting of Other BEFORE END when TYPE DETECTION in the BATTERY 2 page is set to " OTHER" .
*2 : The setting of this item is overridden by the setting of Other END when TYPE DETECTION in the BATTERY 2 page is set to " OTHER" .

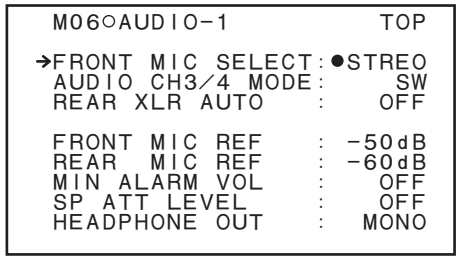
BATTERY 2 Display (Setting-2 the battery-related items)



Item	Setting	Function
TYPE DETECTION*	AUTO/OTHER	AUTO: Automatically detects the type of the battery OTHER: Always judges the battery to be of the "OTHER" type regardless of the actual battery type
SEGMENT NO.7 to NO.1	11.0 to 17.0 V (0.1 V steps)	When the battery type judgment is "OTHER" , sets the voltage level below which the battery status indicator segment No.7 should turn off

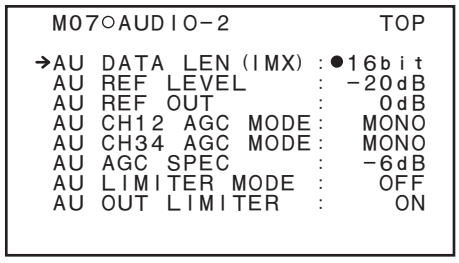
* : When TYPE DETECTION in the BATTERY 2 page is set to "AUTO" , any batteries other than Sony BP series batteries and Anton Bauer intelligent battery systems are classified as "Others".

AUDIO-1 Display (Setting-1 on audio)


M06○AUDIO-1 TOP
→FRONT MIC SELECT:●STREO
AUDIO CH3/4 MODE: SW
REAR XLR AUTO : OFF
FRONT MIC REF : -50dB
REAR MIC REF : -60dB
MIN ALARM VOL : OFF
SP ATT LEVEL : OFF
HEADPHONE OUT : MONO

Item	Setting	Function
FRONT MIC SELECT	MONO/STREO	Selects whether to make the front microphone monaural or stereo
AUDIO CH3/4 MODE	CH1/2/SW	Selects the input signal to be recorded on CH3/4 CH1/2 : Same signals as CH1 and CH2 SW : The input signals that are selected by the AUDIO IN CH3, CH4 switches on the inside panel
REAR XLR AUTO	OFF/ON	Turns ON/OFF the function that automatically detects whether the connector is connected to the AUDIO IN connector at the rear
FRONT MIC REF	−60/−50/−40 dB	Sets the reference input level of the front microphone
REAR MIC REF	−60/−50/−40 dB	Select the reference input level when AUDIO IN CH1 of the rear is set to MIC
MIN ALARM VOL	OFF/SET	Volume of the monitor speaker alarm tone when it is turned all the way down OFF: Almost inaudible SET: Faintly audible
SP ATT LEVEL	OFF/3/6/9 dB	Lowers the volume of the monitor speaker. Has no effect on earphone volume
HEADPHONE OUT	STREO/MONO	Selects whether to make the rear earphone monaural or stereo

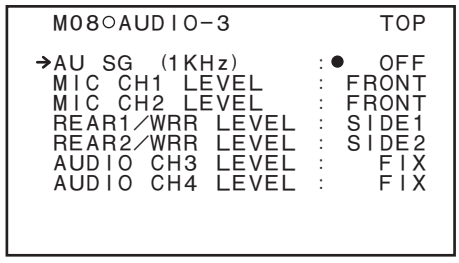
AUDIO-2 Display (Setting-2 on audio)


M07○AUDIO-2 TOP
→AU DATA LEN(IMX) :●16bit
AU REF LEVEL : −20dB
AU REF OUT : 0dB
AU CH12 AGC MODE: MONO
AU CH34 AGC MODE: MONO
AU AGC SPEC : −6dB
AU LIMITER MODE : OFF
AU OUT LIMITER : ON

Item	Setting	Function
AU DATA LEN(IMX)*	16bit/24bit	Sets the record format of audio
AU REF LEVEL	–20 dB/–18 dB/–16 dB/ –12 dB/EBUL	Sets the output level of the 1 kHz test signal
AU REF OUT	EBUL/0 dB/+4 dB/–3 dB	Sets the output level with respect to the REF. level
AU CH12 AGC MODE	MONO/STREO	Selects whether to perform the auto adjustment on the input level of the analog audio signals to be recorded on CH1/CH2 separately for each channel, or in the stereo mode
AU CH34 AGC MODE	MONO/STREO/OFF	Selects whether to perform the auto adjustment on the input level of the analog audio signals to be recorded on CH3/CH4 separately for each channel, or in the stereo mode, or to turn it off
AU AGC SPEC	–6 dB/–9 dB/–12 dB/ –15 dB/–17 dB	Sets the AGC characteristics (saturation level)
AU LIMITER MODE	OFF/–6 dB/–9 dB/–12 dB/ –15 dB/–17 dB	Sets the limiter characteristics (saturation level) for large input signals during the manual adjustment of the audio input level
AU OUT LIMITER	OFF/ON	Turns ON/OFF the audio output limiter

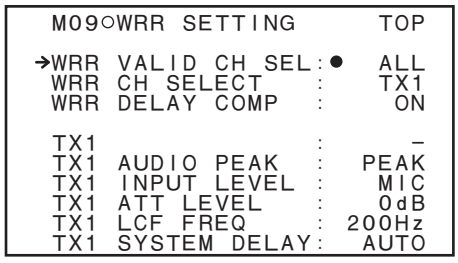
* : Displayed only when REC FORMAT is set to IMX50/40/30.

AUDIO-3 Display (Setting-3 on audio)


M08○AUDIO-3 TOP
→AU SG (1KHz) :● OFF
MIC CH1 LEVEL : FRONT
MIC CH2 LEVEL : FRONT
REAR1/WRR LEVEL : SIDE1
REAR2/WRR LEVEL : SIDE2
AUDIO CH3 LEVEL : FIX
AUDIO CH4 LEVEL : FIX

Item	Setting	Function
AU SG (1 KHz)	ON/OFF/AUTO	Sets whether to output the 1 kHz test tone during the COLOR BAR mode or not ON : 1 kHz test tone is output during the COLOR BAR mode OFF : 1 kHz test tone is not output during the COLOR BAR mode AUTO : 1 kHz test tone is output only when the CH1 AUDIO SELECT switch on the inside panel is in the AUTO position
MIC CH1 LEVEL	SIDE1/FRONT/F+S1	Selects any of these knobs to adjust the front microphone L-CH SIDE1 : Adjusts it with the AUDIO LEVEL knob (left side) on the side panel FRONT : Adjusts it with the MIC LEVEL knob on the front panel F + S1 : It can be adjusted by either the AUDIO LEVEL knob (left side) or the MIC LEVEL knob
MIC CH2 LEVEL	SIDE2/FRONT/F+S2	Selects any of these knobs to adjust the front microphone R-CH SIDE2 : Adjusts it with the AUDIO LEVEL knob (right side) on the side panel FRONT: Adjusts it with the MIC LEVEL knob on the front panel F + S2 : It can be adjusted by either the AUDIO LEVEL knob (right side) or the MIC LEVEL knob (Two knobs are interlocked each other)
REAR1/WRR LEVEL	SIDE1/FRONT/F+S1	Selects any of these knobs to adjust the equipment that is connected to the wireless microphone and what is connected to the AUDIO IN CH1 connector on the rear panel SIDE1 : Adjusts it with the AUDIO LEVEL knob (left side) on the side panel FRONT : Adjusts it with the MIC LEVEL knob on the front panel F + S1 : It can be adjusted by either the AUDIO LEVEL knob (left side) or the MIC LEVEL knob (Two knobs are interlocked each other)
REAR2/WRR LEVEL	SIDE2/FRONT/F+S2	Selects any of these knobs to adjust the equipment that is connected to the wireless microphone and what is connected to the AUDIO IN CH2 connector on the rear panel SIDE2 : Adjusts it with the AUDIO LEVEL knob (right side) on the side panel FRONT : Adjusts it with the MIC LEVEL knob on the front panel F + S2 : It can be adjusted by either the AUDIO LEVEL knob (right side) or the MIC LEVEL knob (Two knobs are interlocked each other)
AUDIO CH3 LEVEL	FIX/FRONT	Selects the audio level recorded on channel 3 when AU CH34 AGC MODE is set to OFF FIX : Fixed FRONT : Level as adjusted by the MIC LEVEL knob on the front panel of the camcorder
AUDIO CH4 LEVEL	FIX/FRONT	Selects the audio level recorded on channel 4 when AU CH34 AGC MODE is set to OFF FIX : Fixed FRONT : Level as adjusted by the MIC LEVEL knob on the front panel of the camcorder

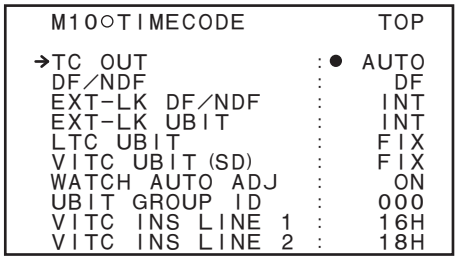
WRR SETTING Display (Setting on Wireless)


M09○WRR SETTING TOP
→WRR VALID CH SEL:● ALL
WRR CH SELECT : TX1
WRR DELAY COMP : ON
TX1 : –
TX1 AUDIO PEAK : PEAK
TX1 INPUT LEVEL : MIC
TX1 ATT LEVEL : 0dB
TX1 LCF FREQ : 200Hz
TX1 SYSTEM DELAY: AUTO

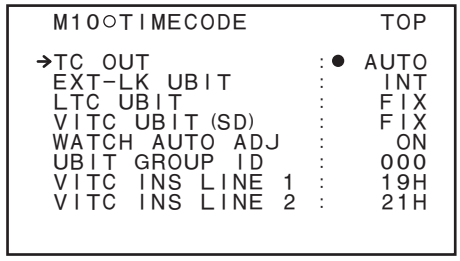
Item	Setting	Function
WRR VALID CH SEL	ALL/CH1	Selects whether to enable channels 1 and 2 of the wireless receiver, or channel 1 only ALL : Enable both channel 1 and 2 CH1 : Enable channel 1 only. Select this setting to use the wireless receiver as a monaural receiver
WRR CH SELECT*2	TX1/TX2	Specifies the target channel for other items in this menu TX1 : Channel 1 TX2 : Channel 2
WRR DELAY COMP*2	OFF/ON	Enables or disables the delay compensation function for wireless audio input OFF : Disables the function ON : Enables the function (the audio in all EE output is delayed by about 8 ms)
TX∗*1, *2	–	Displays the name of the transmitter whose signals are being received on the channel selected by WRR CH SELECT
TX∗*1, *2 AUDIO PEAK	PEAK	Displays whether the AF level of the transmitter whose signals are being received on the channel selected by WRR CH SELECT is over the peak
TX∗*1, *2 INPUT LEVEL	MIC/LINE	Displays whether the input level of the transmitter whose signals are being received on the channel selected by WRR CH SELECT is set to MIC or LINE
TX∗*1, *2 ATT LEVEL	–	Sets the ATT level of the transmitter whose signals are being received on the channel selected by WRR CH SELECT (the permissible setting range may vary depending on the transmitter device)
TX∗*1, *2 LCF FREQ	–	Sets the Low Cut Filter frequency of the transmitter whose signals are being received on the channel selected by WRR CH SELECT (the permissible setting range may vary depending on the transmitter device)
TX∗*1, *2 SYSTEM DELAY	AUTO/0.0 ms to 8.0 ms	When WRR DELAY COMP is set to ON, sets the amount of audio delay for the channel selected by WRR CH SELECT AUTO : Automatically adjusts the amount of delay so that the delay in the audio received from the wireless receiver is zero 0.0 ms to 8.0 ms : Sets the amount of anticipated cases in several wireless systems are being used over a device such as an audio mixer

∗1 : ∗ indicates the channel number.
∗2 : A setting for this item is required when the DWR-S01D Slot-In Digital Wireless Receiver is installed.

TIMECODE Display (Setting on TIME CODE)


M10○TIMECODE TOP
→TC OUT : ● AUTO
DF/NDF : DF
EXT-LK DF/NDF : INT
EXT-LK UBIT : INT
LTC UBIT : FIX
VITC UBIT(SD) : FIX
WATCH AUTO ADJ : ON
UBIT GROUP ID : 000
VITC INS LINE 1 : 16H
VITC INS LINE 2 : 18H

NTSC AREA

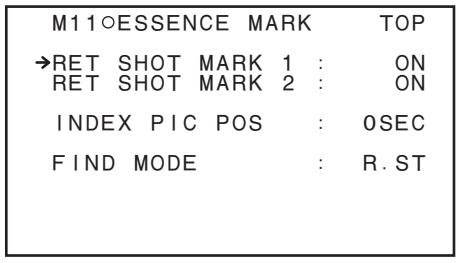

M10○TIMECODE TOP
→TC OUT : ● AUTO
EXT-LK UBIT : INT
LTC UBIT : FIX
VITC UBIT(SD) : FIX
WATCH AUTO ADJ : ON
UBIT GROUP ID : 000
VITC INS LINE 1 : 19H
VITC INS LINE 2 : 21H

PAL AREA

Item	Setting	Function
TC OUT	AUTO/GENE	Sets the time-code signal output AUTO : Outputs the time-code generator during recording and outputs the time-code reader during playback GENE : Outputs the time-code generator during recording and playback
DF/NDF*1	DF/NDF	Sets DF/NDF DF : Drop frame mode NDF : Non drop frame mode
EXT-LK DF/NDF*1	INT/EXT	Selects either internal setting or external setting for DF/NDF INT : Internal EXT : External
EXT-LK UBIT	INT/EXT	Sets whether the LTC UBIT setup value locks to INT or EXT source when the time-code is locked to an external source INT : Internal lock EXT : External lock
LTC UBIT	FIX/TIME	Sets the data to be recorded in U-BIT of LTC FIX : Records the data that is set by user TIME : Records the present time
VITC UBIT(SD)*2	FIX/TIME	Sets the data to be recorded in U-BIT of VITC FIX : Records the data that is set by the user TIME : Records the present time
WATCH AUTO ADJ	OFF/ON	Turns ON/OFF the function to match the built-in watch with the actual time data contained in the U-BIT of external time code data
UBIT GROUP ID	000/101	Selects the UBIT GROUP ID
VITC INS LINE 1*2	12H to 19H (NTSC AREA) 9H to 22H (PAL AREA)	Selects the line into which VITC is to be inserted
VITC INS LINE 2*2	12H to 19H (NTSC AREA) 9H to 22H (PAL AREA)	

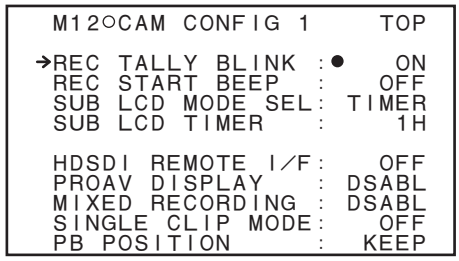
*1 : Displayed only when COUNTRY is set to “NTSC(J)AREA” or “NTSC AREA”.
*2 : Displayed only when the CBKZ-MD01 SD Record and Playback Software is installed.

ESSENCE MARK Display (Setting on essence mark)



Item	Setting	Function
RET SHOT MARK 1	OFF/ON	Turns ON/OFF the function that record shot mark 1 by using RET button
RET SHOT MARK 2	OFF/ON	Turns ON/OFF the function that record shot mark 2 by using RET button
INDEX PIC POS	0 SEC to 10 SEC	Sets the function that display thumbnail image when recording time
FIND MODE	R.ST/CLIP	Selects an operation mode when the NEXT/PREV button is pressed R.ST : Moves to the essence mark of the next or previous REC START CLIP : Moves to the top of the next clip when the NEXT button is pressed, and moves to the top of the current clip when the PREV button is pressed (Moves to the top of the previous clip when the PREV button is pressed at the top of the clip)

CAM CONFIG 1 Display (Setting-1 on camcorder)

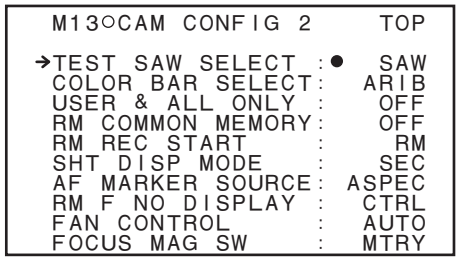

M12○CAM CONFIG 1 TOP
→REC TALLY BLINK :● ON
REC START BEEP : OFF
SUB LCD MODE SEL: TIMER
SUB LCD TIMER : 1H
HDSDI REMOTE I/F: OFF
PROAV DISPLAY : DSABL
MIXED RECORDING : DSABL
SINGLE CLIP MODE: OFF
PB POSITION : KEEP

Item	Setting	Function
REC TALLY BLINK	OFF/ON	Turns ON/OFF the tally blinking at the event of BATTERY BEFORE END/DISC BEFORE END
REC START BEEP	OFF/ON	Turns ON/OFF the beep sound at REC START/STOP
SUB LCD MODEL SEL	TIMER/OFF/CONT	Sets the time counter display on the LCD after the power supply is turned off TIMER : Display is terminated after the elapse of time which is specified in the item SUB LCD TIMER below OFF : No displayed CONT : Displayed
SUB LCD TIMER	1H/3H/8H	Specifies the time to terminate the display of time counter after the power-off, when TIMER was set in the above SUB LCD MODEL SEL (H : hour)
HDSDI REMOTE I/F	OFF/CHARA/G-TLY/ R-TLY	Selects whether to use the function that enables recording control from this unit of an external device connected to the SDI OUT 1/2 connectors (HDSDI output) of this unit.*1 Also selects the indication that shows whether the external device is recording OFF : Do not use the remote recording control function CHARA : Use the function, and indicate by the controlling external device indicator in the viewfinder G-TLY : Use the function, and indicate by the TALLY indicator in the viewfinder R-TLY : Use the function, and indicate by the REC (recording, red tally) indicator in the viewfinder
PROAV DISPLAY	DSABL/ENABL	Specifies whether to display the PROAV folder when this unit is accessed by a FAM/FTP connection DSABL : Do not display ENABL : Display
MIXED RECORDING	DSABL/ENABL	Turns ON/OFF the function that enables recording and saving of the clips having the different recording formats to the same disc only when they belong to the same frame frequency group*2
SINGLE CLIP MODE	OFF/ON	Selects the clip for the playback operation ON : Selects only the currently selected clip for the playback operation OFF : Selects all clips stored on the disc for the playback operation
PB POSITION	KEEP/TOP	Specifies the playback start position of the clip or sub clip when switching between the clip playback screen and the clip list playback screen KEEP : Resumes playback at the previous stop position TOP : Starts playback from the top clip or from the top frame of the top sub clip

*1 : SDI OUT 1 SELECT or SDI OUT 2 SELECT in the OUTPUT 1 page of the OPERATION menu must be set to HDSDI.
*2 : The details of the frame frequency groups are shown below.

Frame frequency	System frequency
59.94 Hz	59.94P, 59.94i, 29.97P
50 Hz	50P, 50i, 25P
23.98 Hz	23.98P

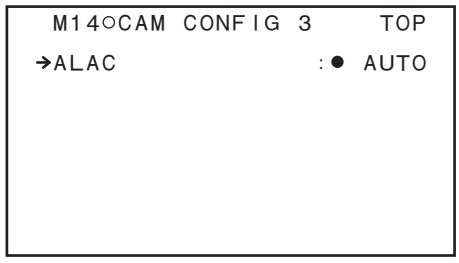
CAM CONFIG 2 Display (Setting-2 on camcorder)


M13○CAM CONFIG 2 TOP
→TEST SAW SELECT :● SAW
COLOR BAR SELECT: ARIB
USER & ALL ONLY : OFF
RM COMMON MEMORY: OFF
RM REC START : RM
SHT DISP MODE : SEC
AF MARKER SOURCE: ASPEC
RM F NO DISPLAY : CTRL
FAN CONTROL : AUTO
FOCUS MAG SW : MTRY

Item	Setting	Function
TEST SAW SELECT	REC/SAW	Selects the test signal
COLOR BAR SELECT	ARIB/100%/75%/SMPTE	Selects the color bar type Reference : The R GAIN and B GAIN value also change accordingly at the same time.
USER & ALL ONLY	OFF/ON	Show only USER menu in the top menu
RM COMMON MEMORY	OFF/ON	Selects whether or not to share settings for when a remote control unit is connected and when the unit is used alone
RM REC START	RM/CAM/PARA	When an remote control unit is connected, selects which recording start/stop buttons are enabled RM : Remote control unit CAM : Camcorder PARA : Both
SHT DISP MODE	SEC/DEG	Selects shutter speed display (second or degree)
AF MARKER SOURCE*1	SAFE/ASPEC/USER	When the FUJINON PF lens (HA22×7.4BRD, HA13×4.5BRD) is connected, selects which existing marker is enabled to display the AF detection window ASPEC : Use ASPECT MARKER as the substitute SAFE : Use SAFETY ZONE as the substitute USER : Use USER BOX as the substitute (It is not displayed in the LCD/VBS output)
RM F NO DISPLAY	CTRL/RET	Selects the method used to display IRIS F values on the MSU-900 or another remote control unit CTRL : Display on the basis of control value from the camera (normal display method) RET: Display on the basis of position information from the lens (same method as when AUTO IRIS is enabled)
FAN CONTROL*2	AUTO/R.MIN/MIN	Selects the control method of the cooling fan AUTO : The cooling fan rotation is automatically controlled R.MIN : The cooling fan runs at a low speed only during recording (The fan stops rotating if the temperature inside the unit does not rise due to the low temperature environment) MIN : The cooling fan runs at a low speed (The fan stops rotating if the temperature inside the unit does not rise due to the low temperature environment) **Note** Regardless of the setting of this item, the cooling fan starts running at a high speed if the internal temperature of the unit rises close to the point where an alarm is issued.
FOCUS MAG SW	MTRY/ALT	Selects the operation when the FOCUS MAG function is assigned to the ASSIGN switch MTRY : Turns ON only as long as it is pressed ALT : Toggles between ON and OFF each time it is pressed (Turns OFF automatically after 5 seconds have passed since ON)

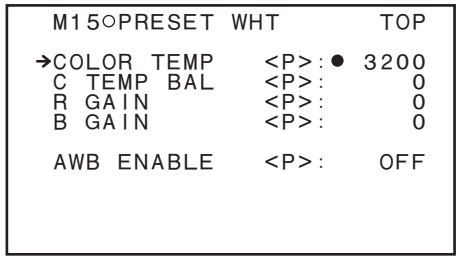
*1 : Displayed only when AF DISPLAY is set to ON on SERVICE MENU.
*2 : The setting of this item is retained even after the power is turned off.

CAM CONFIG 3 Display (Setting-3 on camcorder)



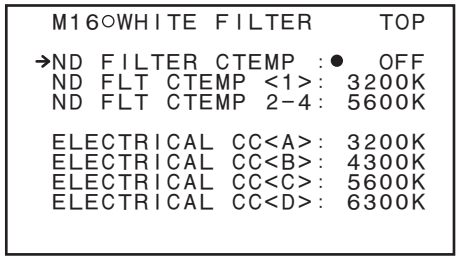
Item	Setting	Function
ALAC	OFF/AUTO	Sets the operation of the lens aberration correction function OFF : Turns OFF the function forcibly even when the lens that supports the aberration correction function is mounted AUTO : Turns ON the function when the lens that supports the aberration correction function is mounted

PRESET WHT Display (WHITE BAL switch: The function to adjust the white balance gain that is assigned to PRST)



Item	Setting	Function
COLOR TEMP <P>	Displays the color temperature (Guideline)	Sets the white balance preset Reference : The R GAIN and B GAIN values also change accordingly at the same time.
C TEMP BAL <P>	(–99 to 99)	Uses this item for fine adjustment when the optimum color cannot be obtained by the above COLOR TEMP Reference : The R GAIN and B GAIN values also change accordingly at the same time.
R GAIN <P>	(–99 to 99)	Uses this menu item to set the color temperature of a WHITE preset value, by adjusting R GAIN
B GAIN <P>	(–99 to 99)	Uses this menu item to set the color temperature of a WHITE preset value, by adjusting B GAIN
AWB ENABLE <P>	OFF/ON	Turns ON/OFF the function that sets the white balance adjustment value as the preset value when the white balance automatic adjustment is executed with the WHITE BAL switch being set in PRST

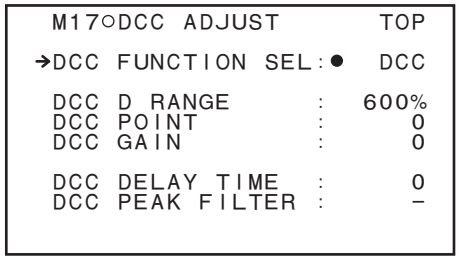
WHITE FILTER Display (Setting the color temperatures to assign to the electrical color correction (CC) filters)



Item	Setting	Function
ND FILTER CTEMP	OFF/ON	Selects whether to assign electrical CC filters to neutral density (ND) filters, or to switch by using the COLOR TEMP button
ND FLT CTEMP <1>	3200K/4300K/5600K/6300K	Select the color temperatures when the electrical CC filters are assigned to the ND filters
ND FLT CTEMP 2-4	3200K/4300K/5600K/6300K	
ELECTRICAL CC* A/B/C/D	3200K/4300K/5600K/6300K /-----	Select the color temperatures selected by electrical CC filter switching, when the electrical CC filter switching function is assigned to an ASSIGN switch

∗ : At the C and D items, the positions to which the dash marks ----- are set can be selected. When the dash marks ----- is selected, the filter position cannot be selected.
(These items are skipped C and D items when operated from the ASSIGNABLE switch.)

DCC ADJUST Display (Setting the DCC function)



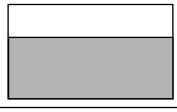
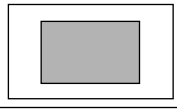
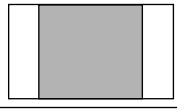
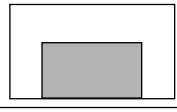
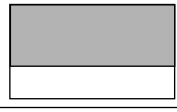
Item	Setting	Function
DCC FUNCTION SEL	DCC/FIX	Selects the DCC function modes when the DCC switch is ON DCC : Automatically makes adjustments according to the knee point and the luminance of the object FIX : Executes knee correction by fixing the knee point at 600%
DCC D RANGE	400/450/500/550/600 (%)	Sets the dynamic range when the DCC switch is set to ON
DCC POINT	(–99 to 99)	Sets the minimum knee point when the DCC switch is set to ON
DCC GAIN	(–99 to 99)	Adjusts the gain to DCC detected value when the DCC switch is set to ON
DCC DELAY TIME	(–99 to 99)	Sets the response speed of DCC (Increasing the data slows down the response speed)
DCC PEAK FILTER	(0 to 15)	Adjust the response sensitivity to the peak of the DCC detected value

AUTO IRIS 2 Display (Setting-2 AUTO IRIS)

```
  M18○AUTO IRIS 2        TOP

→IRIS WINDOW      :●     1
 IRIS WINDOW IND. :     OFF
 IRIS LEVEL       :       0
 IRIS APL RATIO   :       0
 IRIS VAR WIDTH   :     240
 IRIS VAR HEIGHT  :     135
 IRIS VAR H POS   :       0
 IRIS VAR V POS   :       0
 IRIS SPEED       :       0
 CLIP HIGH LIGHT  :     OFF
```

Item	Setting	Function
IRIS WINDOW	1/2/3/4/5/6/VAR	Selects the IRIS WINDOW (detection range)*1 When VAR is selected, the iris window can be set by the IRIS VAR WIDTH/HEIGHT/H POS/V POS as described below
IRIS WINDOW IND.	OFF/ON	Turns ON/OFF the function that displays a frame marker for the auto iris detection window
IRIS LEVEL	(–99 to 99)	Sets the auto iris convergence level
IRIS APL RATIO	(–99 to 99)	Adjusts the mix ratio of the auto iris detection peak value and average value
IRIS VAR WIDTH	20 to 479	Sets width of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR HEIGHT	20 to 269	Sets height of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR H POS	–460 to 459*2	Sets the center in the horizontal direction of the iris window when VAR is selected in the above IRIS WINDOW
IRIS VAR V POS	–250 to 249*2	Sets the center in the vertical direction of the iris window when VAR is selected in the above IRIS WINDOW
IRIS SPEED	(–99 to 99)	Sets the AUTO IRIS response speed
CLIP HIGH LIGHT	OFF/ON	Turns ON/OFF the function that limits the AUTO IRIS detection level to 100% when the video signal of higher than 100% is input

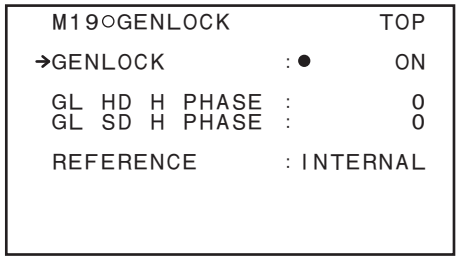
*1 : The IRIS WINDOW is set as shown below.

Setting	1	2	3	4	5	6
VF screen						

Shaded ( ) area : IRIS WINDOW frame

*2 : Range of this setting is different depending upon the above IRIS VAR WIDTH/HEIGHT setting.

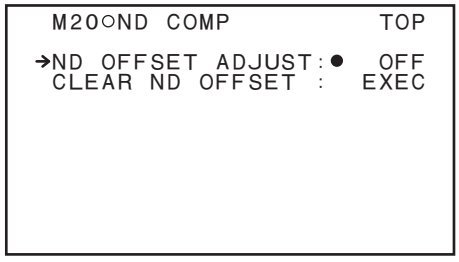
GENLOCK Display (Setting on GENLOCK input connector)



Item	Setting	Function
GENLOCK	OFF/ON	Turns ON/OFF the function that synchronizes the internal reference signal with the video signal that is connected to the GENLOCK connector
GL HD H PHASE	(–99 to 99)	GENLOCK phase adjustment (HD)
GL SD H PHASE*	(–99 to 99)	GENLOCK phase adjustment (SD)
REFERENCE	Display only	Displays the type of genlocked reference signal

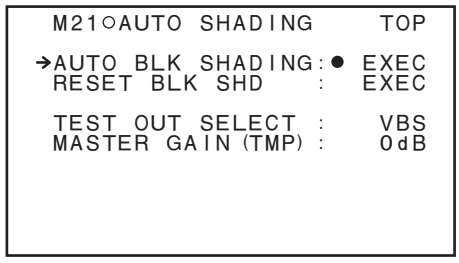
* : This does not appear when SYSTEM LINE is set to 1080 and SYSTEM FREQUENCY is set to 23.9P.

ND COMP Display (ND OFFSET compensation)



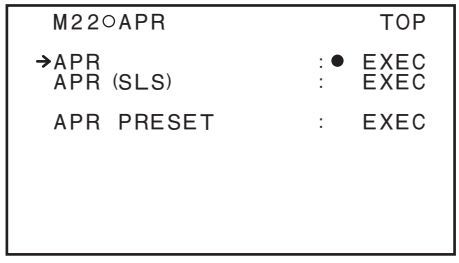
Item	Setting	Function
ND OFFSET ADJUST	OFF/ON	Turns ON/OFF the ND OFFSET adjustment mode
CLEAR ND OFFSET	Press the MENU knob to execute this menu item	Returns the ND OFFSET value to the production adjustment value

AUTO SHADING Display (Automatic SHADING adjustment)



Item	Setting	Function
AUTO BLK SHADING	–	Executes the auto black shading function
RESET BLK SHD	–	Clears black shading compensation values
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT and the VBS/SDI OUT connector (Invalid when the BARS signal is selected) (The Y-signal becomes the VBS signal when VBS is selected in the SD REAR BNC OUT of the OUTPUT SEL display (of the OPERATION menu) and SD is selected in the TEST OUT SELECT). The output signal returns to the Y-signal without fail at power-on
MASTER GAIN(TMP)	–6/–3/0/3/6/9/12/18/ 24/30/36/42 dB	Temporarily sets the master gain value

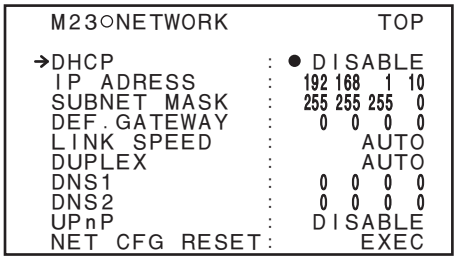
APR Display (Detect compensation function)



Item	Setting	Function
APR	–	Executes the defect compensation function
APR (SLS)*	–	Suppresses white flecks in SLS (Slow Speed Shutter) mode by executing the automatic pixel noise reduction function **Note** The execution time for this function is about 30 minutes. More time may be required when temperatures inside the unit are low.
APR PRESET	–	Deletes white flecks data that was added by execution of the APR and automatic black balance adjustment functions

* : This does not appear when SYSTEM LINE is set to 720, SYSTEM FREQUENCY is set to 59.9P, and SCAN MODE is set to 23.9P.

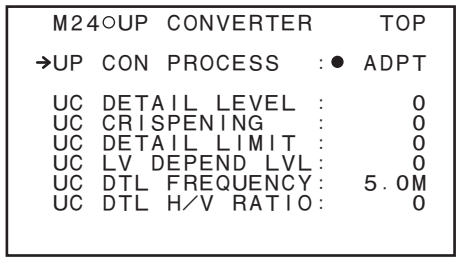
NETWORK Display (Setting on NETWORK)


M23○NETWORK TOP
→DHCP : ● DISABLE
IP ADRESS : 192 168 1 10
SUBNET MASK : 255 255 255 0
DEF.GATEWAY : 0 0 0 0
LINK SPEED : AUTO
DUPLEX : AUTO
DNS1 : 0 0 0 0
DNS2 : 0 0 0 0
UPnP : DISABLE
NET CFG RESET : EXEC

Item	Setting	Function
DHCP*	ENABL/DISABLE	Selects whether to enable automatic acquisition of the IP address from a DHCP server
IP ADDRESS*	192 168 1 10	Sets the IP address
SUBNET MASK*	255 255 255 0	Sets the subnet mask
DEF.GATEWAY*	0 0 0 0	Sets the default gateway
LINK SPEED*	AUTO/10Mbps/100Mbps	Sets the communications speed
DUPLEX*	AUTO/FULL/HALF	Sets the duplex mode AUTO : Automatically sets full duplex or half duplex FULL : Full duplex communication HALF : Half duplex communication
DNS1*	0 0 0 0	Sets the DNS address 1 (Required in order to select the connecting device from the host name using the FTP client function)
DNS2*	0 0 0 0	Sets the DNS address 2 (Required in order to select the connecting device from the host name using the FTP client function)
UPnP*	DISABLE/ENABLE	Enables or disables the Universal Plug & Play function
NET CFG RESET	Press the MENU knob to execute this menu item	Resets all of the setup items on the NETWORK page

* : The unit must be restarted to enable changes to this setting.

UP CONVERTER Display (Setting on Upconverter)


M24○UP CONVERTER TOP
→UP CON PROCESS :● ADPT
UC DETAIL LEVEL : 0
UC CRISPENING : 0
UC DETAIL LIMIT : 0
UC LV DEPEND LVL: 0
UC DTL FREQUENCY: 5.0M
UC DTL H/V RATIO: 0

Item	Setting	Function
UP CON PROCESS	FIELD/ADPT	Selects the conversion source picture when SD is upconverted to HD FIELD : Use the field picture ADPT : Optimize the ratio of conversion from the frame or field picture
UC DETAIL LEVEL	(–99 to 99)	Adjusts the sharpness of edge enhancement by the upconverter
UC CRISPENING	(–8 to 7)	Sets the amplitude width at which the upconverter does not emphasize low-amplitude signals
UC DETAIL LIMIT	(–99 to 99)	Sets the maximum level of edge enhancement by the upconverter
UC LV DEPEND LVL	(–8 to 7)	Sets the luminance of edge enhancement by the upconverter
UC DTL FREQUENCY	3.2M/4.5M/5.0M/4.0M	Sets the center frequency and frequency properties of edge enhancement by the upconverter 3.2M : 3.2 ± 1.1 MHz 4.5M : 4.5 ± 1.4 MHz 5.0M : 5.0 ± 0.7 MHz 4.0M : 4.0 ± 2.0 MHz
UC DTL H/V RATIO	(–3 to 4)	Sets the horizontal/vertical ratio of edge enhancement by the upconverter

4-7. FILE Menu

For details of the file structure and the method to save the files, refer to “Section 5. File System.”

Note

When the range of setting is surrounded by parenthesis ( ) in the setting column, the setup value is the relative value. The range of setting in parenthesis ( ) can be different from what shown in the manual depending on the setting in the layer lower than this menu.

USER FILE Display (Operating the USER files)

```
  F01○USER FILE          TOP

→USER FILE LOAD   :● EXEC
 USER FILE SAVE   :  EXEC

 F.ID : □□□□□□□□□□□□□□□□

 USER PRESET      :  EXEC
```

Item	Setting	Function
USER FILE LOAD	Press the MENU knob to move to the file selection display	Reads the USER file from a Memory Stick (For the description of the file selection display, see below to the following descriptions)
USER FILE SAVE	Press the MENU knob to move to the file selection display	Saves the USER file to a Memory Stick (For the description of the file selection display, see below to the following descriptions)
F.ID	16 characters (alphanumeric characters, symbols and spaces)	Sets the file ID (When the USER FILE SAVE is executed, this ID is saved)
USER PRESET	Press the MENU knob to execute this menu item	Returns all the items of the USER menu to the standard setup

File selection display

```
P00 USER LOAD      ESC
  MEMORY STICK ACCESS
DISPLAY MODE      :  ALL

001.□□□□□□□□□ 00/000/00
002.□□□□□□□□□ 00/000/00
003.□□□□□□□□□ 00/000/00
004.□□□□□□□□□ 00/000/00
005.NO FILE
```

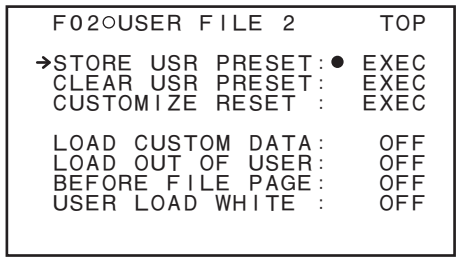
USER FILE LOAD

```
P00 USER SAVE      ESC
  MEMORY STICK ACCESS
DISPLAY MODE      :  ALL

001.□□□□□□□□□ 00/000/00
002.□□□□□□□□□ 00/000/00
003.□□□□□□□□□ 00/000/00
004.□□□□□□□□□ 00/000/00
005.NEW FILE
```

USER FILE SAVE

Item	Setting	Function
MEMORY STICK ACCESS	Display only	The display appears when inserting a Memory Stick or during saving data in a Memory Stick or during reading data from a Memory Stick
DISPLAY MODE	ALL/F.ID/DATA/MODEL	Switches the attributes when displaying the following file ALL : File ID and date are displayed (□□□□□□□□□ 00/JAN/00) F. ID : File ID is displayed (□□□□□□□□□□□□□□□□) DATA : Date and time of saving the file are displayed (00/00/00 00 : 00 : 00) MODEL: Model name and format are displayed (PDW-700 59.94i)
001 to 005	Press the MENU knob to execute this menu item	When the file does not exist, the message NO FILE is displayed Select the target read file from which data is read or select the target storage file to which the data is going to be stored When saving the data in a new file, select NEW FILE

USER FILE 2 Display (Operating the USER file)


F02○USER FILE 2 TOP
→STORE USR PRESET:● EXEC
CLEAR USR PRESET: EXEC
CUSTOMIZE RESET : EXEC
LOAD CUSTOM DATA: OFF
LOAD OUT OF USER: OFF
BEFORE FILE PAGE: OFF
USER LOAD WHITE : OFF

Item	Setting	Function
STORE USR PRESET	Press the MENU knob to execute this menu item	Saves the data that is set by the USER menu, in the PRESET layer and uses it as the standard setup
CLEAR USR PRESET	Press the MENU knob to execute this menu item	Returns the USER menu setup to the default setting when shipped from the factory
CUSTOMIZE RESET	Press the MENU knob to execute this menu item	Returns the items that are edited by the MENU CUSTOMIZE menu, to the original setting
LOAD CUSTOM DATA	OFF/ON	Turns ON/OFF the function to read out the data from Memory Stick that are set on the MENU CUSTOMIZE menu during execution of USER FILE LOAD
LOAD OUT OF USER	OFF/ON	Turns ON/OFF the function to read out the data from Memory Stick that are not contained in the present USER menu during execution of USER FILE LOAD
BEFORE FILE PAGE	OFF/ON	Turns ON/OFF the function not to save the USER FILE page and the subsequent pages of the USER menu, in Memory Stick during execution of USER FILE SAVE ON : Not to save
USER LOAD WHITE	OFF/ON	Turns ON/OFF the function to read out the white balance data from Memory Stick that are saved in USER FILE during execution of USER FILE LOAD

ALL FILE Display (Operating the ALL file)

```
  F03○ALL FILE          TOP

→ALL FILE LOAD    :● EXEC
 ALL FILE SAVE    :  EXEC
 F.ID : □□□□□□□□□□□□□□□□

 ALL PRESET       :  EXEC
 STORE ALL PRESET :  EXEC
 CLEAR ALL PRESET :  EXEC

 3SEC CLR PRESET  :   OFF
 NETWORK DATA     :   OFF
```

Item	Setting	Function
ALL FILE LOAD	Press the MENU knob to move to the file selection display	Reads the ALL file from a Memory Stick (For the description of the file selection display, see below)
ALL FILE SAVE	Press the MENU knob to move to the file selection display	Saves the ALL file in a Memory Stick (For the description of the file selection display, see below)
F.ID	16 characters (alphanumeric numbers, symbols and space)	Sets the file ID (When ALL FILE SAVE is execute, this name is saved)
ALL PRESET	Press the MENU knob to execute this menu item	Returns all the data of all menu items to the standard settings
STORE ALL PRESET	Press the MENU knob to execute this menu item	Saves all the data that are set by all of the menu items, in the PRESET/ESCAPE layer and uses them as the standard setups
CLEAR ALL PRESET	Press the MENU knob to execute this menu item	Returns the settings of all menu items to the default setting when shipped from the factory
3SEC CLR PRESET	OFF/ON	Turns ON/OFF the function that returns the data in the PRESET layer to its factory-set value when the MENU CANCEL/PRST/ESCAPE switch is pressed for 3 seconds (It returns to OFF at power-on even when having been turned ON)
NETWORK DATA	OFF/ON	Selects whether or not to read in the network-related data

File selection display

```
P00 ALL LOAD        ESC
  MEMORY STICK ACCESS
DISPLAY MODE      :  ALL

001.□□□□□□□□□□ 00/000/00
002.□□□□□□□□□□ 00/000/00
003.□□□□□□□□□□ 00/000/00
004.□□□□□□□□□□ 00/000/00
005.NO FILE
```

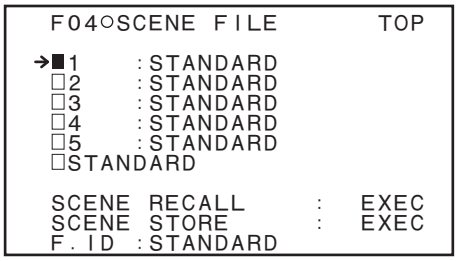
ALL FILE LOAD

```
P00 ALL SAVE        ESC
  MEMORY STICK ACCESS
DISPLAY MODE      :  ALL

001.□□□□□□□□□□ 00/000/00
002.□□□□□□□□□□ 00/000/00
003.□□□□□□□□□□ 00/000/00
004.□□□□□□□□□□ 00/000/00
005.NEW FILE
```

ALL FILE SAVE

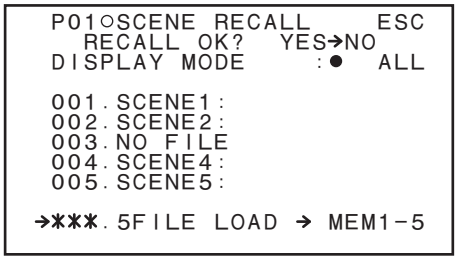
Descriptions of the respective file selection displays are the same as the file selection display of the USER FILE display.
For details, refer to the corresponding item of the USER FILE display.

SCENE FILE Display (Operating the SCENE file)



Item	Setting	Function
1 to 5	STANDARD	Selects the file when reading the SCENE file from the unit
STANDARD	–	Selects whether to return the SCENE file setup to the standard setting or not to return to When pressing the MENU knob during the "■" display, the standard setting is canceled and returns to the original setting
SCENE RECALL	Press the MENU knob to move to the file selection display	Read the SCENE file from a Memory Stick (For the description of the file selection display, see below)
SCENE STORE	Press the MENU knob to move to the file selection display	Save the SCENE file to the main unit or Memory Stick (For the description of the file selection display, see below)
F.ID	16 characters (alphanumeric characters, symbols and space)	Sets the file ID (When the SCENE file is stored, the file ID is saved)

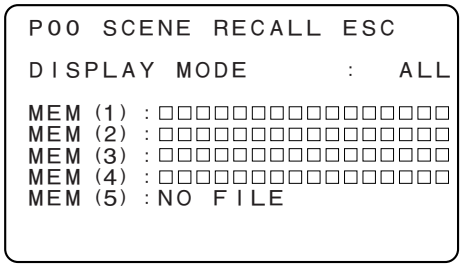
File selection display (When calling a file from the inside of the unit/when saving a file to the inside of the unit)



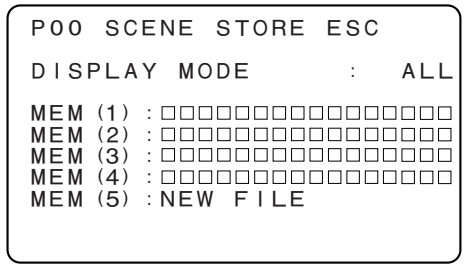
SCENE RECALL

Item	Setting	Function
DISPLAY MODE	ALL/F.ID/DATE/MODEL	Switches the attributes when displaying a file stored in a Memory Stick For a file stored in the main unit, the file ID is displayed when ALL/F.ID/DATE is selected. When MODEL is selected, the format when the file was saved is displayed
MEM (1) to (5)	Press the MENU knob to execute this menu item	Select the target read file from which data is read or select the target storage file to which the data is going to be stored When the file does not exist, the message NO FILE is displayed When saving the data in a new file, select NEW FILE

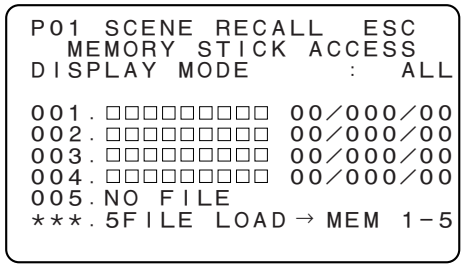
File selection display (When reading a file from a Memory Stick/when saving a file to a Memory Stick)



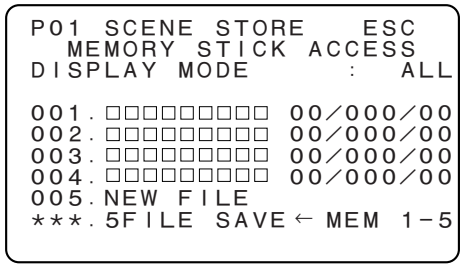
↓ page moves to



↓ page moves to



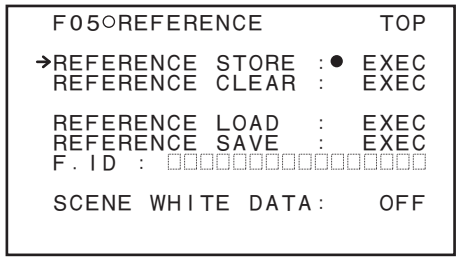
SCENE RECALL



SCENE STORE

Item	Setting	Function
MEMORY STICK ACCESS	Display only	The display appears when inserting a Memory Stick or during saving data in a Memory Stick or during reading data from a Memory Stick
DISPLAY MODE	ALL/F.ID/DATE/MODEL	Switches the attributes when displaying the following file ALL : File ID and date are displayed (□□□□□□□□□ 00/JAN/00) F. ID : File ID is displayed (□□□□□□□□□□□□□□□□□□□□) DATE : Date and time of saving the file are displayed (00/00/00 00 : 00 : 00) MODEL: Model name and format are displayed (PDW-700 59.94i)
001 to 005	Press the MENU knob to execute this menu item	When the file does not exist, the message NO FILE is displayed Select the target read file from which data is read or select the target storage file to which the data is going to be stored When saving the data in a new file, select NEW FILE
5FILE LOAD	Press the MENU knob to execute this menu item	Reads the 5 files that are being displayed on screen, into MEM1-5 inside the main unit
5FILE SAVE	Press the MENU knob to execute this menu item	Saves the contents of MEM1-5 of the main unit that are being displayed on screen, into 5 files

REFERENCE Display (Operating the REFERENCE file)



Item	Setting	Function
REFERENCE STORE	Press the MENU knob and select YES for the confirmation message to execute this menu item	Saves the REFERENCE file in the main unit
REFERENCE CLEAR	Press the MENU knob and select YES for the confirmation message to execute this menu item	Returns the setting of the REFERENCE file to the standard setting
REFERENCE LOAD	Press the MENU knob and select YES for the confirmation message to execute this menu item	Reads the REFERENCE file from a Memory Stick
REFERENCE SAVE	Press the MENU knob and select YES for the confirmation message to execute this menu item	Saves the REFERENCE file in a Memory Stick
F.ID	16 characters (alphanumeric numbers, symbols and space)	Sets the file ID (When REFERENCE STORE of REFERENCE SAVE is executed, this ID is saved)
SCENE WHITE DATA	OFF/ON	Turns ON/OFF the function to read out the white balance data that are saved in SCENE file during execution of SCENE FILE RECALL

LENS FILE 1 Display (Setting-1 the LENS file)

```
F06○LENS FILE 1          TOP

→LENS FILE RECALL:● EXEC
 LENS FILE STORE :  EXEC
 F.ID : □□□□□□□□□□□□□□□□
 SOURCE : MEMORY 1
 LENS NO OFFSET  :  EXEC
 LENS AUTO RECALL:  S.No
 S.No  :  (unknown)
 L.ID  :  (unknown)
 L.MF  :  (unknown)
```

Item	Setting	Function
LENS FILE RECALL	Press the MENU knob to move to the file selection display	Calls the LENS file from the main unit, or read the LENS file from a Memory Stick (For the description of the file selection display, see below)
LENS FILE STORE	Press the MENU knob to move to the file selection display	Save the LENS file to the main unit or Memory Stick (For the description of the file selection display, see below)
F.ID	16 characters (alphanumeric characters, symbols and spaces)	Sets the file ID (When the LENS FILE STORE is executed, the file ID is saved)
SOURCE	Display only	Displays the memory number of the LENS file from which the data is read
LENS NO OFFSET	Press the MENU knob to execute this menu item	Returns the LENS file setting to the standard setting
LENS AUTO RECALL	OFF/ON/S.No	Turns ON/OFF the auto recall function when a serial lens is attached
S.No*	Display only	Displays the serial number of the lens (when the serial lens is attached) when LENS AUTO RECALL is set to S.No
L.ID*	Display only	Displays the unique ID of the lens (when a serial lens is attached)
L.MF*	Display only	Displays the manufacturer name of the lens (when a serial lens is attached)

∗ : When a lens other than a serial lens is attached, (Unknown) is displayed.

Note

When the LENS FILE STORE is executed, the stored memory number is displayed. When the LENS NO OFFSET is executed, the message NO OFFSET is displayed.

File selection display (When calling a file from the inside of the unit/when saving a file to the inside of the unit)

```
     LENS RECALL ESC

DISPLAY MODE      :  ALL

MEM (1) :□□□□□□□□□□□□□□□□
MEM (2) :□□□□□□□□□□□□□□□□
MEM (3) :□□□□□□□□□□□□□□□□
MEM (4) :□□□□□□□□□□□□□□□□
MEM (5) :NEW FILE
```

LENS FILE RECALL

```
     LENS STORE ESC

DISPLAY MODE      :  ALL

MEM (1) :□□□□□□□□□□□□□□□□
MEM (2) :□□□□□□□□□□□□□□□□
MEM (3) :□□□□□□□□□□□□□□□□
MEM (4) :□□□□□□□□□□□□□□□□
MEM (5) :NEW FILE
```

LENS FILE STORE

File selection display (When reading a file from a Memory Stick/when saving a file to a Memory Stick)

```
P07 LENS RECALL   ESC
  MEMORY STICK ACCESS
DISPLAY MODE      :  ALL

001.□□□□□□□□□ 00/000/00
002.□□□□□□□□□ 00/000/00
003.□□□□□□□□□ 00/000/00
004.□□□□□□□□□ 00/000/00
005.NO FILE

***.M.S.001-032▶MEM1-32
```

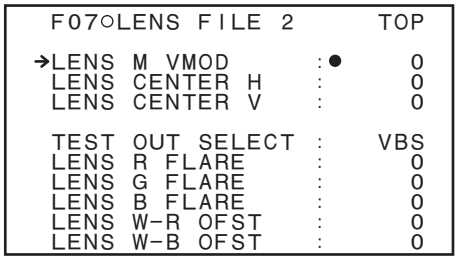
LENS FILE RECALL

```
P07 LENS STORE    ESC
  MEMORY STICK ACCESS
DISPLAY MODE      :  ALL

001.□□□□□□□□□ 00/000/00
002.□□□□□□□□□ 00/000/00
003.□□□□□□□□□ 00/000/00
004.□□□□□□□□□ 00/000/00
005.NEW FILE

***.M.S.001-032◀MEM1-32
```

LENS FILE STORE

Descriptions of the respective file selection displays are the same as the file selection display of the SCENE FILE display. For details, refer to the corresponding item of the SCENE FILE display.

LENS FILE 2 Display (Setting-2 the LENS file)


F07○LENS FILE 2 TOP
→LENS M VMOD :● 0
LENS CENTER H : 0
LENS CENTER V : 0
TEST OUT SELECT : VBS
LENS R FLARE : 0
LENS G FLARE : 0
LENS B FLARE : 0
LENS W-R OFST : 0
LENS W-B OFST : 0

Item	Setting	Function
LENS M VMOD	(–99 to 99)	Adjusts the lens file V SAW shading compensation
LENS CENTER H	–480 to 479	Sets the center marker position (Horizontal direction)
LENS CENTER V	–270 to 269	Sets the center marker position (Vertical direction)
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector
LENS R FLARE	(–99 to 99)	Adjusts the R flare compensation level
LENS G FLARE	(–99 to 99)	Adjusts the G flare compensation level
LENS B FLARE	(–99 to 99)	Adjusts the B flare compensation level
LENS W-R OFST	(–99 to 99)	Adjusts the R white gain offset value
LENS W-B OFST	(–99 to 99)	Adjusts the B white gain offset value

Note

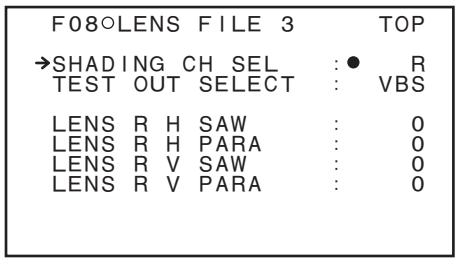
In the LENS M VMOD, LENS CENTER H, LENS CENTER V, LENS R/G/B FLARE and LENS W-R/W-B OFST, the lens extender position is displayed in the rightmost-end of the menu items.

Blank : Extender OFF

EX : Extender ON

0.8 : Shrinker ON

LENS FILE 3 Display (Setting-3 the LENS file)



Item	Setting	Function
SHADING CH SEL	Y/R/G/B/TEST	Selects the channel of shading adjustment
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal that is output from the TEST OUT connector
LENS R H SAW	(–99 to 99)	Adjusts the H SAW correction value
LENS R H PARA	(–99 to 99)	Adjusts the H PARA correction value
LENS R V SAW	(–99 to 99)	Adjusts the V SAW correction value
LENS R V PARA	(–99 to 99)	Adjusts the V PARA correction value

Note

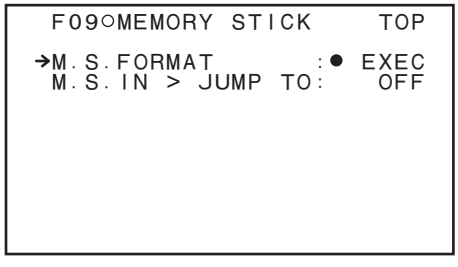
In the LENS R/G/B V/H SAW and LENS R/G/B V/H PARA, the lens extender position is displayed in the rightmost-end of the menu items.

Blank : Extender OFF

EX : Extender ON

0.8 : Shrinker ON

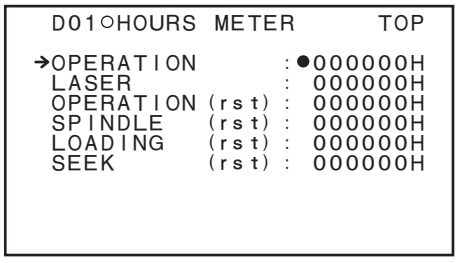
MEMORY STICK Display (Function on Memory Stick)



Item	Setting	Function
M. S. FORMAT	Press the MENU knob to execute this menu item	Implements formatting of a Memory Stick (All of the data is erased)
M. S. IN > JUMP TO	OFF/USER/ALL/SCENE/ LENS/REFER/USER1	Sets the function that opens the file setup page automatically as a Memory Stick is inserted when this menu is set to ON (This function is disabled when the file-related page is opened already)

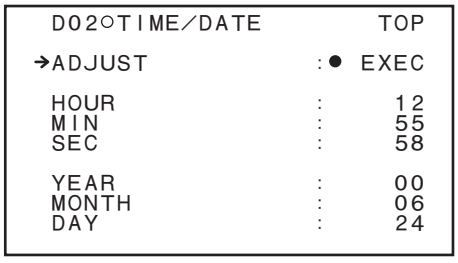
4-8. DIAGNOSIS Menu

HOURS METER Display (Confirming and resetting hours meter)



Item	Setting	Function
OPERATION	Display only	Displays the total operation time
LASER	Display only	Calculates and displays the total optical output parameter of the optical head
OPERATION (rst)	Display only	Displays the total operation time (Can be reset)
SPINDLE (rst)	Display only	Displays the total time of SPINDLE rotation (Can be reset)
LOADING (rst)	Display only	Displays the total count of disc insertion (Can be reset)
SEEK (rst)	Display only	Displays the total seek time of the optical head (Can be reset)

TIME/DATE Display (Confirming and setting date and hour)



Item	Setting	Function
ADJUST	Press the MENU knob Then the TIME ADJUST display appears	Sets date and time (For more details, refer to “Setting the Date/Time of Internal Clock” of Operation Manual)
HOUR	Display only	Hour
MIN	Display only	Minute
SEC	Display only	Second
YEAR	Display only	Year
MONTH	Display only	Month
DAY	Display only	Day

ROM VERSION 1 Display (Displaying the ROM version)

```
→D03○ROM VERSION 1    TOP

  PACKAGE          :   x.xx

  SY1              :   x.xx
  SY2K             :   x.xx
  SY2U             :   x.xx
  DRV              :   x.xx

  AT               :   x.xx
  FP               :   x.xx
```

Item	Setting	Function
PACKAGE	Display only	Displays the firmware package version*
SY1	Display only	Displays the IC200 version stored in the ROM (IC505, IC506) on the SY-355 board*
SY2K	Display only	Displays the IC1300 version stored in the IC1405 and IC1406 on the SY-355 board*
SY2U	Display only	Displays the IC1300 version stored in the IC1405 and IC1406 on the SY-355 board*
DRV	Display only	Displays the IC600 version stored in the ROM (IC602) on the DR-606 board*
AT	Display only	Displays the IC209 version stored in the ROM (IC302, IC303) on the AT-177 board*
FP	Display only	Displays the ROM version of the IC921 on the FP-157 board*

* : Can be upgraded with the firmware package file from MENU.

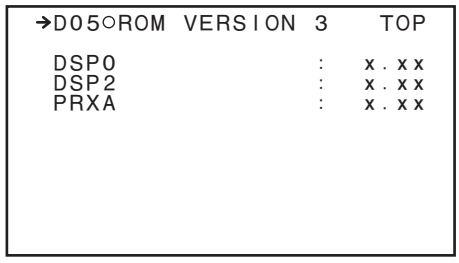
ROM VERSION 2 Display (Displaying the ROM version)

```
→D04○ROM VERSION 2    TOP

  LVIS             :   x.xx
  TSYS             :   x.xx
  TMBP             :   x.xx
  FAM              :   x.xx
  LABY             :   x.xx
  BRDG             :   x.xx
  PIER             :   x.xx
  CAVA             :   x.xx
```

Item	Setting	Function
LVIS	Display only	Displays the DVP-45 board's IC400 version stored in the ROM (IC505, IC506) on the SY-355 board*1
TSYS	Display only	Displays the DVP-45 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-355 board*1
TMBP	Display only	Displays the DVP-45 board's IC1000, IC1200, IC1400 version stored in the ROM (IC505, IC506) on the SY-355 board*1
FAM	Display only	Displays the SY-355 board's IC600 version stored in the ROM (IC505, IC506) on the SY-355 board*1 *2
LABY	Display only	Displays the ROM version of the IC1000 on the DCP-44 board*1
BRDG	Display only	Displays the SY-355 board's IC900 version stored in the ROM (IC505, IC506) on the SY-355 board*1
PIER	Display only	Displays the DVP-45 board's IC1900 version stored in the ROM (IC505, IC506) on the SY-355 board*1
CAVA	Display only	Displays the DVP-45 board's IC200 version stored in the ROM (IC505, IC506) on the SY-355 board*1

*1 : Can be upgraded with the firmware package file from MENU.
*2 : Displayed only when OPERATION MENU - POWER SAVE - i.LINK(FAM) is set to ENABL.

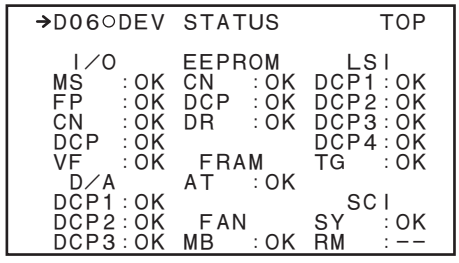
ROM VERSION 3 Display (Displaying the ROM version)



Item	Setting	Function
DSP0	Display only	Displays the DVP-45 board's IC800 version stored in the ROM (IC505, IC506) on the SY-355 board*
DSP2	Display only	Displays the DVP-45 board's IC801 version stored in the ROM (IC505, IC506) on the SY-355 board*
PRXA	Display only	Displays the DVP-45 board's IC900 version stored in the ROM (IC505, IC506) on the SY-355 board*

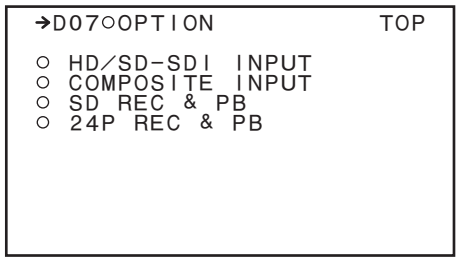
* : Can be upgraded with the firmware package file from MENU.

DEV STATUS Display (Checking the communication function of each device)



Item	Display	Function
I/O	–	I/O : Status display of MS/FP/CN/DCP/VF MS-86:IC2/FP-157:IC107/CN-3005:IC1/ DCP-44:IC1119/VF(IO in each VF) OK/NG/–– message is displayed OK : Normal NG : Abnormal –– : The state is not defined
D/A	–	D/A : Status display of DCP1/DCP2/DCP3 DCP-44:IC1524/DCP-44:IC1518/DCP-44:IC1525
EEPROM	–	EEPROM : Status display of CN/DCP/DR CN-3005:IC2/DCP-44:IC8/DR-617:IC20
FRAM	–	FRAM : Status display of AT AT-177 : IC308
FAN	–	FAN : Status display of MB
LSI	–	LSI : Status display of DCP1/DCP2/DCP3/DCP4/TG DCP-44:IC600/DCP-44:IC800/DCP-44:IC221/ DCP-44:IC1000/TG-260:IC8
SCI	–	SCI : Status display of SY/RM

OPTION Display (Displaying the option feature)



Item	Setting	Function
HD/SD-SDI INPUT	Display only	○ appears when the optional CBK-HD01 HD/SD-SDI Input Board is installed
COMPOSITE INPUT	Display only	○ appears when the optional CBK-SC02 Analog Composite Input Board is installed
SD REC & PB	Display only	○ appears when the optional CBKZ-MD01 SD Record and Playback Software is installed
24P REC & PB	Display only	○ appears when the optional CBKZ-FC01 23.98P Record and Playback Software is installed

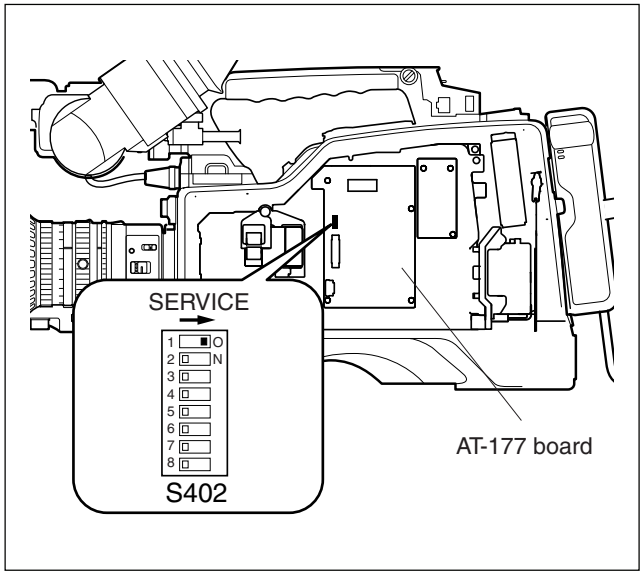
4-9. SERVICE Menu

Note

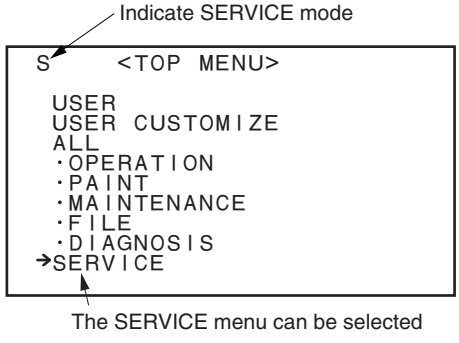
When the range of setting is surrounded by parenthesis ( ) in the setting column, the setup value is the relative value. The range of setting in parenthesis ( ) can be different from what shown in the manual depending on the setting in the layer lower than this menu.

Display method 1

1. Open the inside panel. (Refer to Section 1-7-3, step 1.)
2. Set the S402-1/AT-177 board to the "ON" position.



3. Close the inside panel. (Refer to Section 1-7-3, step 1.)
4. Turn on the power and flip the MENU switch to ON.
5. Enter SERVICE mode to display the SERVICE menu.



6. The following contents are available in the SERVICE menu.

```
 S00○CONTENTS          TOP
↓↓
 01.MENU SET
→02.SP FUNC
 03.WHITE SHADING
 04.BLACK SHADING
 05.SHADING
 06.VCO ADJUST
 07.CCD ADJUST 1
 08.CCD ADJUST 2
 09.REGI ADJUST
 10.FBC ADJUST
```

7. Keep turning the MENU knob to display the next page (11-20).

```
 S00○CONTENTS          TOP
↓↓
 11.LCD ADJUST
 12.FLARE
 13.GAMMA/DETAIL
 14.MANUAL RPN
 15.RPN MANAGE
 16.VDR MAINTENANCE
 17.FAN
 18.MEASURE
 19.FILTER CTEMP
→20.BATTERY INFO
```

8. Keep turning the MENU knob further to display the next page (21-25).

```
 S00○CONTENTS          TOP
↓↓
 16.VDR MAINTENANCE
 17.FAN
 18.MEASURE
 19.FILTER CTEMP
 20.BATTERY INFO
 21.HOURS METER2
 22.FUNCTION LIMIT
 23.S/H DC
 24.BOARD INFO
→25.SERVICE FILE
```

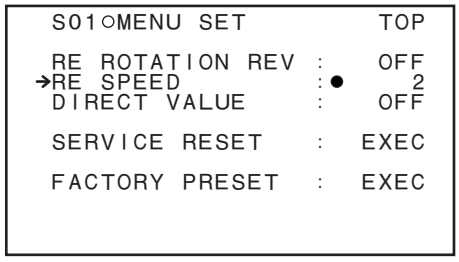
Notes

- After servicing is completed, make sure to set the S402-1/AT-177 board to the "OFF" position, and exit from SERVICE mode.
- When parameters are changed while the SERVICE menu is displayed, run ALL PRESET from the RESET menu after exiting from SERVICE mode to activate the changed parameters.

Display method 2

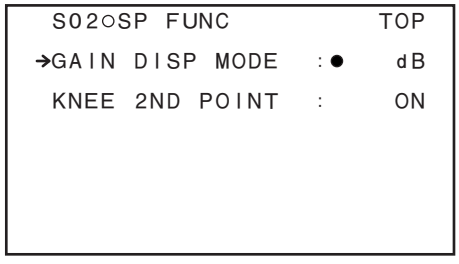
- Select the DIAGNOSIS menu D00 ● CONTENTS page.
- While pressing the MENU knob and the ASSIGN1 switch simultaneously, set the MENU ON/OFF switch from OFF to ON. (However, if the switch S402-2/AT-177 board is set to ON, or if the switch S400/AT-177 board is OFF, this method is disabled).

MENU SET



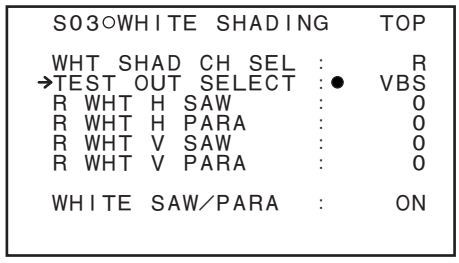
Item	Setting	Function
RE ROTATION REV	OFF/ON	Turns ON/OFF the function to invert the rotating direction of the MENU knob
RE SPEED	1/2/3	Sets the response speed of the MENU knob 1 (slow) → 3 (fast)
DIRECT VALUE	OFF/DEC/HEX	OFF: The set value is displayed after conversion (in the range of −99 to 99) (It returns to OFF when the main power is turned on) DEC : The set value is displayed after being converted into a decimal number (The variable range differs depending on the item) HEX : The set value is displayed after being converted into a hexadecimal number (The variable range differs depending on the item)
SERVICE RESET	Press the MENU knob to execute this menu item	Resets the data in the SERVICE hierarchy Refer to “5-2 Data Structure” for details of the hierarchical structure
FACTORY PRESET	Press the MENU knob to execute this menu item	Returns all of the settings to the default setting when shipped from the factory (Excluding the black balance automatic adjustment value)

SP FUNC



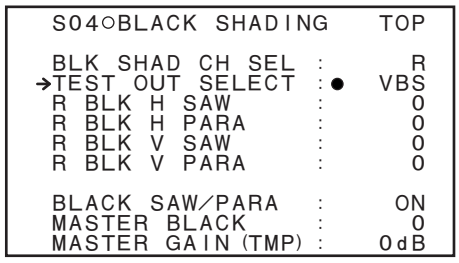
Item	Setting	Function
GAIN DISP MODE	dB/ISO	Turns ON/OFF the function that sets the GAIN value in the ISO indication ON: ISO indication OFF: Decibel (dB) indication **Note** Correspondence between the ISO and decibel (dB) indications is shown below. Values in parenthesis indicate the decibel (dB) indication 400(-6)/570(-3)/800(0)/1100(3)/1600(6)/2300(9)/3200(12)/6400(18) 13000(24)/26000(50)/51000(36)/100000(42)
KNEE 2ND POINT	OFF/ON	The setting whether or not to enable the knee 2nd point when compressing a high luminance signal ON : The knee 2nd point is enabled to allow operator to compress the high luminance part in wide range OFF : The knee 2nd point is disabled and only the knee 1st point is enabled

WHITE SHADING



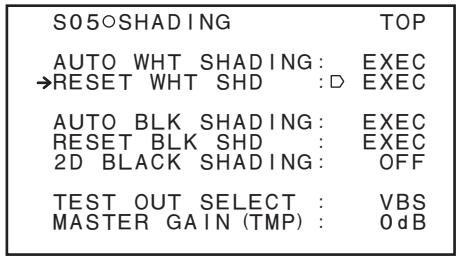
Item	Setting	Function
WHT SHAD CH SEL	R/G/B/TEST	Selects the channel of shading correction
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector
R WHT H SAW (R/G/B)	(−99 to 99)	Adjusts the H SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
R WHT H PARA (R/G/B)	(−99 to 99)	Adjusts the H PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
R WHT V SAW (R/G/B)	(−99 to 99)	Adjusts the V SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
R WHT V PARA (R/G/B)	(−99 to 99)	Adjusts the V PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above WHT SHAD CH SEL
WHITE SAW/PARA	OFF/ON	Turns ON/OFF all of the white shading menu items of R/G/B, H/V and SAW/PARA corrections

BLACK SHADING


S04○BLACK SHADING TOP
BLK SHAD CH SEL : R
→TEST OUT SELECT :● VBS
R BLK H SAW : 0
R BLK H PARA : 0
R BLK V SAW : 0
R BLK V PARA : 0
BLACK SAW/PARA : ON
MASTER BLACK : 0
MASTER GAIN(TMP) : 0dB

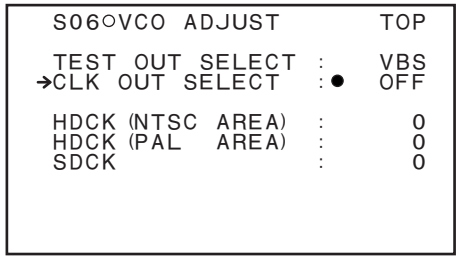
Item	Setting	Function
BLK SHAD CH SEL	R/G/B/TEST	Selects the channel of shading correction
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector
R BLK H SAW (R/G/B)	(−99 to 99)	Adjusts the H SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
R BLK H PARA (R/G/B)	(−99 to 99)	Adjusts the H PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
R BLK V SAW (R/G/B)	(−99 to 99)	Adjusts the V SAW correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
R BLK V PARA (R/G/B)	(−99 to 99)	Adjusts the V PARA correction The R, G and B displays are switched in accordance with the channel selection implemented by the above BLK SHAD CH SEL
BLACK SAW/PARA	OFF/ON	Turns ON/OFF all of the black shading menu items of R/G/B, H/V and SAW/PARA corrections
MASTER BLACK	(−99 to 99)	Adjusts the master black level (All of the R, G and B master black levels are adjusted)
MASTER GAIN (TMP)	−6/−3/0/3/6/9/12/ 18/24/30/36/42 dB	Temporarily adjusts the master gain value

SHADING


S05○SHADING TOP
AUTO WHT SHADING: EXEC
→RESET WHT SHD :▷ EXEC
AUTO BLK SHADING: EXEC
RESET BLK SHD : EXEC
2D BLACK SHADING: OFF
TEST OUT SELECT : VBS
MASTER GAIN (TMP) : 0dB

Item	Setting	Function
AUTO WHT SHADING	Press the MENU knob to execute this menu item	Starts to the auto white shading adjustment
RESET WHT SHD	Press the MENU knob to execute this menu item	Returns the white shading value to the default value when shipped from the factory (SAW/PARA)
AUTO BLK SHADING	Press the MENU knob to execute this menu item	Starts to the auto black shading adjustment
RESET BLK SHD	Press the MENU knob to execute this menu item	Returns the black shading value to the default value when shipped from the factory (SAW/PARA or 2D)
2D BLACK SHADING	OFF/ON	Turns ON/OFF the function that sets whether to apply 2D black shading (area shading)
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector
MASTER GAIN (TMP)	−6/−3/0/3/6/9/12/ 18/24/30/36/42 dB	Temporarily adjusts the master gain value

VCO ADJUST



Item	Setting	Function
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector
CLK OUT SELECT	OFF/HDCK (N)/HDCK (P)/ SDCK	Outputs the clock from the TEST OUT connector
HDCK (NTSC AREA)	−99 to 99	Adjusts the transmitting frequency of HD Adjusts the HDCK (N) output to be 37.0879 MHz
HDCK (PAL AREA)	−99 to 99	Adjusts the transmitting frequency of HD Adjusts the HDCK (P) output to be 37.125 MHz
SDCK	−99 to 99	Adjusts the transmitting frequency of SD Adjusts the SDCK output to be 27 MHz

CCD ADJUST 1

```
  S07○CCD ADJUST 1     TOP

  R CCD GAIN        :      0
→G CCD GAIN        :●     0
  B CCD GAIN        :      0
  R TEST SAW GAIN   :      0
  G TEST SAW GAIN   :      0
  B TEST SAW GAIN   :      0

  TEST SAW          :    OFF
  TEST OUT SELECT   :    VBS
```

Item	Setting	Function
R CCD GAIN	−99 to 99	Adjusts the sensitivity of the R-channel
G CCD GAIN	−99 to 99	Adjusts the sensitivity of the G-channel
B CCD GAIN	−99 to 99	Adjusts the sensitivity of the B-channel
R TEST SAW GAIN	−99 to 99	Adjusts the GAIN of the R-channel test saw
G TEST SAW GAIN	−99 to 99	Adjusts the GAIN of the G-channel test saw
B TEST SAW GAIN	−99 to 99	Adjusts the GAIN of the B-channel test saw
TEST SAW	OFF/ON	Turns ON/OFF the test saw function
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector

CCD ADJUST 2

```
  S08○CCD ADJUST 2     TOP

  R VSUB            : 14.0V
→G VSUB            :●14.0V
  B VSUB            : 14.0V
  R VSUB OFST (P)   : ±0.0V
  G VSUB OFST (P)   : ±0.0V
  B VSUB OFST (P)   : ±0.0V

  CCD H DRIVER      :  6.0V
  AD CLOCK PHASE    :    ±0
  TEST OUT SELECT   :   VBS
```

Item	Setting	Function
R VSUB	9.0 V to 18.0 V (0.1 V step) *1	Sets the V. substrate voltage of the R-channel
G VSUB	9.0 V to 18.0 V (0.1 V step) *1	Sets the V. substrate voltage of the G-channel
B VSUB	9.0 V to 18.0 V (0.1 V step) *1	Sets the V. substrate voltage of the B-channel
R VSUB OFST (P)	−5.0 V to +5.0 V (0.1 V step)	Adjusts the offset for the V. substrate voltage of the R-channel during the progressive reading*2
G VSUB OFST (P)	−5.0 V to +5.0 V (0.1 V step)	Adjusts the offset for the V. substrate voltage of the G-channel during the progressive reading*2
B VSUB OFST (P)	−5.0 V to +5.0 V (0.1 V step)	Adjusts the offset for the V. substrate voltage of the B-channel during the progressive reading*2
CCD H DRIVER	5.2 V/5.4 V/5.6 V/5.8 V/6.0 V/6.2 V	Sets the drive voltage of the CCD H DRIVE
AD CLOCK PHASE	−2/−1/±0/+1/+2	Sets the phase frequency of AD
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector

*1 : The default value varies depending on the set.

*2 : The setting that enters the Camcorder in the progressive reading

- When the SYSTEM LINE is 1080 and SYSTEM FREQUENCY is 29.9P, 25P or 23.9P at the same time, or when the slow shutter function is set to ON.
- When the SYSTEM LINE is 720 and the SYSTEM FREQUENCY is 59.9P, and at the same time SCAN MODE is 23.9P.

For example, the V. substrate voltage of the R-channel in 1080/29.9P becomes the sum of R VSUB setup value and the R VSUB OFST (P) setup value.

REGI ADJUST

```
  S09○REGI ADJUST      TOP

  R CCD REGI      :   0.000%
→B CCD REGI       :   0.000%

  R DCP REGI      :   0.000%
  B DCP REGI      :   0.000%

  DCP REGI PULSE  :     OFF
  TEST OUT SELECT :     VBS
```

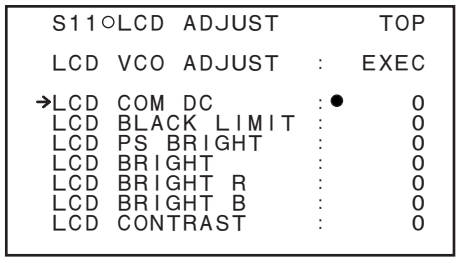
Item	Setting	Function
R CCD REGI	−0.100 to 0.1 % (0.002 % step)	Adjusts the registry (H direction) of CCD
B CCD REGI	−0.100 to 0.1 % (0.002 % step)	Adjusts the registry (H direction) of CCD
R DCP REGI	−0.100 to 0.1 % (0.002 % step)	Adjusts the registry (H direction) of the DCP circuit
B DCP REGI	−0.100 to 0.1 % (0.002 % step)	Adjusts the registry (H direction) of the DCP circuit
DCP REGI PULSE	OFF/ON	Turns ON/OFF the pulse for the adjustment of the registry (H direction) of the DCP circuit
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector

FBC ADJUST

```
  S10○FBC ADJUST       TOP

  FBC ADJUST MODE :     OFF

  R FBC OFFSET    :       0
→G FBC OFFSET     :●      0
  B FBC OFFSET    :       0

  TEST OUT SELECT :     VBS
```

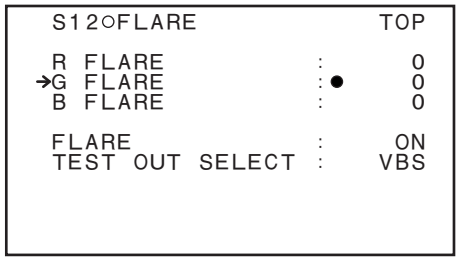
Item	Setting	Function
FBC ADJUST MODE	OFF/ON	Periodically switches the high-speed feedback clamp and the normal feedback clamp (For adjusting R/G/B FBC OFFSET)
R FBC OFFSET	(−99 to 99)	Adjusts the DC offset for the high-speed feedback clamp
G FBC OFFSET	(−99 to 99)	Adjusts the DC offset for the high-speed feedback clamp
B FBC OFFSET	(−99 to 99)	Adjusts the DC offset for the high-speed feedback clamp
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector

LCD ADJUST


S11○LCD ADJUST TOP
LCD VCO ADJUST : EXEC
→LCD COM DC :● 0
LCD BLACK LIMIT : 0
LCD PS BRIGHT : 0
LCD BRIGHT : 0
LCD BRIGHT R : 0
LCD BRIGHT B : 0
LCD CONTRAST : 0

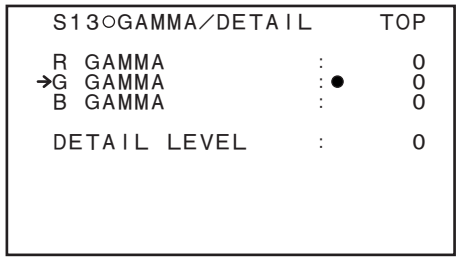
Item	Setting	Function
LCD VCO ADJUST	Press the MENU knob to execute this menu item	Adjusts the free run frequency of the color LCD VCO
LCD COM DC	(–99 to 99)	Adjusts the DC bias of the common electrode drive signal of the color LCD
LCD BLACK LIMIT	(–99 to 99)	Adjusts the limiter level on the black side of the color LCD
LCD PS BRIGHT	(–99 to 99)	Adjusts the amplitude of the output signal of the color LCD PSIG
LCD BRIGHT	(–99 to 99)	Adjusts the color LCD brightness displayed in normal position
LCD BRIGHT R	(–99 to 99)	Adjusts the black balance of the picture displayed in normal position Adjusts the R output signal BRIGHT with reference to the G output signal
LCD BRIGHT B	(–99 to 99)	Adjusts the black balance of the picture displayed in reverse position Adjusts the B output signal BRIGHT with reference to the G output signal
LCD CONTRAST	(–99 to 99)	Adjusts the color LCD contrast displayed in normal position

FLARE



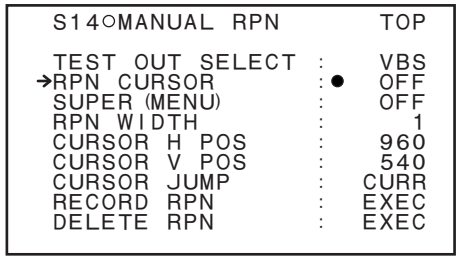
Item	Setting	Function
R FLARE	(–99 to 99)	Adjusts the R flare compensation level
G FLARE	(–99 to 99)	Adjusts the G flare compensation level
B FLARE	(–99 to 99)	Adjusts the B flare compensation level
FLARE	OFF/ON	Turns ON/OFF the flare compensation circuit
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector

GAMMA / DETAIL



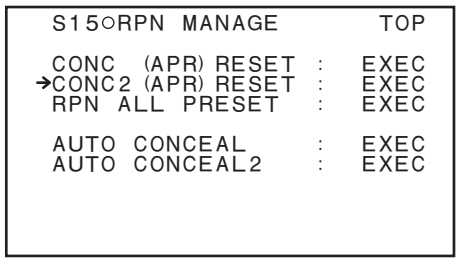
Item	Setting	Function
R GAMMA	(–99 to 99)	Offsets PAINT/GAMMA/R
G GAMMA	(–99 to 99)	Offsets PAINT/GAMMA/G
B GAMMA	(–99 to 99)	Offsets PAINT/GAMMA/B
DETAIL LEVEL	(–99 to 99)	Offsets PAINT/DETAIL1/DETAIL LEVEL

MANUAL RPN


S14○MANUAL RPN TOP
TEST OUT SELECT : VBS
→RPN CURSOR :● OFF
SUPER (MENU) : OFF
RPN WIDTH : 1
CURSOR H POS : 960
CURSOR V POS : 540
CURSOR JUMP : CURR
RECORD RPN : EXEC
DELETE RPN : EXEC

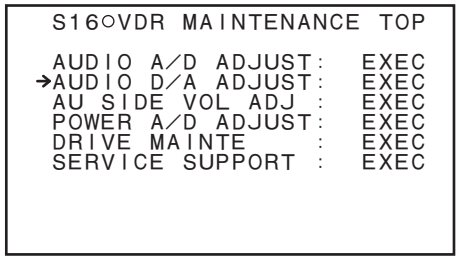
Item	Setting	Function
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Selects the video signal of the TEST OUT connector
RPN CURSOR	OFF/ON	Controls ON/OFF of the RPN cursor
SUPER (MENU)	OFF/ON	Turns ON/OFF the character information output (superimpose) of the TEST OUT connector
RPN WIDTH	0/1/2/3/4	Sets the RPN correction width
CURSOR H POS	37 to 1966	Sets position of the RPN cursor (horizontal)
CURSOR V POS	34 to 1118	Sets position of the RPN cursor (vertical)
CURSOR JUMP	PREV/CURR/NEXT	Jumps the cursor to the position in which the RPN data is registered PREV : Jumps to the RPN data preceding the current position CURR : Current display NEXT : Jumps to the RPN data after the current position
RECORD RPN	Press the MENU knob to execute this menu item	Registers the RPN data of the present cursor position
DELETE RPN	Press the MENU knob to execute this menu item	Deletes the RPN data of the present cursor position

PRN MANAGE



Item	Setting	Function
CONC (APR) RESET	Press the MENU knob to execute this menu item	Deletes the RPN data registered at ABB, APR, or AUTO CONCEAL
CONC2 (APR) RESET	Press the MENU knob to execute this menu item	Deletes the RPN data registered at ABB, APR (SLS), or AUTO CONCEAL2
RPN ALL PRESET	Press the MENU knob to execute this menu item	Returns all RPN data to the state of factory shipment (Data registered manually are also deleted)
AUTO CONCEAL	Press the MENU knob to execute this menu item	Executes the AUTO RPN correction (The Black Level adjustment is not executed)
AUTO CONCEAL2	Press the MENU knob to execute this menu item	Executes the AUTO RPN correction (For SLS ON) (The Black Level adjustment is not executed) **Note** The execution time for this function is about 30 minutes. More time may be required when temperatures inside the unit are low.

VDR MAINTENANCE

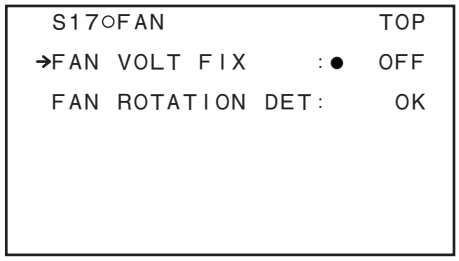

S16○VDR MAINTENANCE TOP
AUDIO A/D ADJUST: EXEC
→AUDIO D/A ADJUST: EXEC
AU SIDE VOL ADJ : EXEC
POWER A/D ADJUST: EXEC
DRIVE MAINTE : EXEC
SERVICE SUPPORT : EXEC

Item	Setting	Function
AUDIO A/D ADJUST	Press the MENU knob to execute this menu item	Adjustment of the AUDIO A/D Error Correction value (Refer to “4-11. AUDIO A/D Error Correction” for details)
AUDIO D/A ADJUST	Press the MENU knob to execute this menu item	Adjustment of the AUDIO D/A Error Correction value (Refer to “4-12. AUDIO D/A Error Correction” for details)
AU SIDE VOL ADJ	Press the MENU knob to execute this menu item	Adjustment of the AUDIO LEVEL Volume (inside panel) Error Correction value (Refer to “4-13. AUDIO LEVEL Volume Compensation” for details)
POWER A/D ADJUST	Press the MENU knob to execute this menu item	Adjustment of the Battery END Detecting Voltage (Refer to “4-14. Adjusting Battery End Detection Voltage” for details)
DRIVE MAINTE	Press the MENU knob to move to the DRIVE MAINTE screen	For the description of DRIVE MAINTE screen, see below
SERVICE SUPPORT	Press the MENU knob to move to the SERVICE SUPPORT screen	Displaying the VDR system error log and setting clear (Refer to “4-15. SERVICE SUPPORT Menu” for details)

DRIVE MAINTE Screen

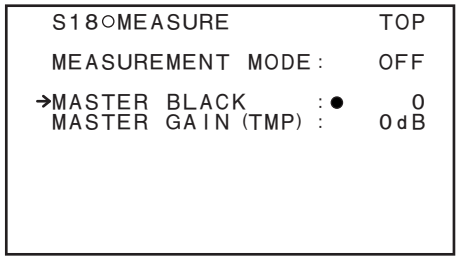
Menu	Item	Sub item	Description
CHECK	DEVICE	TEMPERATURE SENSOR	Checks the temperature sensor on the drive block
		DEW SENSOR	Checks the dew sensor on the optical block assembly
		FAN MOTOR	Checks the fan motor connected to the drive block
		ACCELERATION SENSOR	Checks the acceleration sensor
	LOADER		Checks the loader performance
	SLIDER	AUTO TEST	Checks the slider performance and the limit sensor
		IN-LIM TEST	Moves the slider to the IN LIMIT position
		OUT-LIM TEST	Move the slider to the OUT LIMIT position
	SPINDLE MOTOR	AUTO TEST	Checks the spindle motor performance
	OPTICAL BLOCK	FOCUS ACTUATOR	Checks the focus directions of the two shafts
		TRACKING ACTUATOR	Checks the tracking directions of the two shafts
		SA ACTUATOR	Checks the SA actuator
		LASER	Checks the laser
		ND FILTER	Checks the ND filter
	LENS CLEANING		Performs Pick-up lens cleaning
ADJUST	SERVO_1		Servo 1 system (MTX BLOCK, PI/FE BLOCK, FE AGC) auto adjustment
	SKEW	TAN ADJUST RAD ADJUST	Adjust the skew
	SERVO_2		Servo 2 system (SKEW OFFSET, TE/CE BLOCK, SV LOOP GAIN) auto adjustment
	OTHER ADJUST	ACCELERATION OFFSET	Adjusts the offset of the acceleration sensor
ERROR LOGGER			Records the error occurred in the drive
OTHERS	VERSION		Displays the version of the drive block
	SERIAL NO		Displays the serial number of the drive block
	CLEAR MEDIA LOG		Clears the acquired media information
	MEMORY SUPPORT	UPLOAD TO EEPROM	Uploads the data backed up in the DR-606 board back to the EEPROM (IC4) on the SE-857 board

FAN



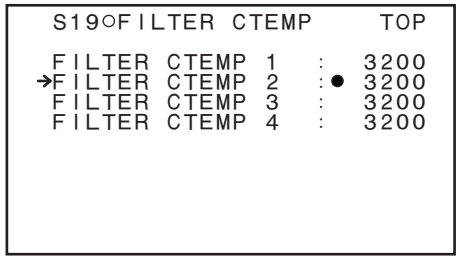
Item	Setting	Function
FAN VOLT FIX	OFF/ON	Sets the fan mode (Normally, set this to OFF and use the automatic control) OFF: Temperature increase inside the unit is detected and the fan is automatically controlled ON: The fan is controlled by the fixed voltage (8 V) (For the operation check of the fan)
FAN ROTATION DET	—/OK/NG	Display only

MEASURE



Item	Setting	Function
MEASUREMENT MODE	OFF/S/N/MODU/RESO/ SENSE/REGI/DRANG	Selects the measurement mode OFF : It returns to OFF when the main power is turned on S/N : S/N ratio measurement mode MODU : Modulation degree measurement mode RESO : Resolution power measurement mode SENSE : Sensitivity measurement mode REGI : Registration measurement mode DRANG : Dynamic range measurement mode
MASTER BLACK	(−99 to 99)	Adjusts the master black level (All of the R, G and B signal black levels are adjusted)
MASTER GAIN(TMP)	−6/−3/0/3/6/9/12/18/24/ 30/36/42	Sets the tentative gain value

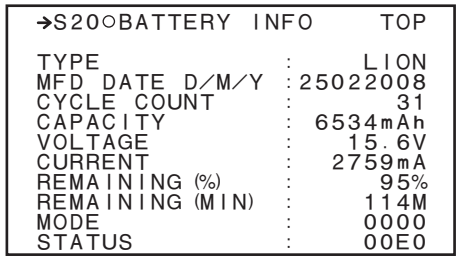
FILTER CTEMP



Item	Setting	Function
FILTER CTEMP 1	2000 to 10000 (100/1 step)	Sets the color temperature of filter 1
FILTER CTEMP 2	2000 to 10000 (100/1 step)	Sets the color temperature of filter 2
FILTER CTEMP 3	2000 to 10000 (100/1 step)	Sets the color temperature of filter 3
FILTER CTEMP 4	2000 to 10000 (100/1 step)	Sets the color temperature of filter 4

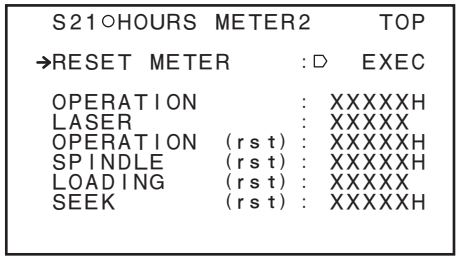
BATTERY INFO

When the battery (BP-GL65/GL95) supporting Info is used



Item	Setting	Function
TYPE	Display only	Selecting battery types
MFD DATE D/M/Y	Display only	Date of manufacture
CYCLE COUNT	Display only	Number of times of charge/discharge
CAPACITY	Display only	Selecting the capacity when battery is fully charged
VOLTAGE	Display only	Indicating the battery voltage
CURRENT	Display only	Indicating the battery current
REMAINING (%)	Display only	Indicating the remaining power of the battery in units of %
REMAINING (MIN)	Display only	Indicating the remaining power of the battery in units of time (minute)
MODE	Display only	Battery operating mode is displayed
STATUS	Display only	Battery status is displayed

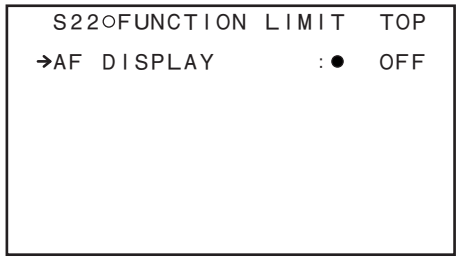
HOURS METER 2



Refer to “6-4. Digital Hours Meter” for the description of HOURS METER 2 page.

Item	Setting	Function
RESET METER	Press the MENU knob to move to the RESET METER display	Resets the hours meters
OPERATION	Display only	OPERATION (operation time display) mode Accumulates the time during which the power is turned on, and displays the value by an hour
LASER	Display only	LASER PARAMETER (optical block assembly light output time display) mode Accumulates the time (laser-illuminated hours) during which the light is being emitted, and displays the value by an hour. Resettable The value can be used as a reference to when the next periodical replacement should be
OPERATION (rst)	Display only	OPERATION (operation time display) mode (resettable) This is the same function as the OPERATION mode above, but is resettable By resetting it after replacing a part, the value can be used as a reference to when the next periodical replacement should be
SPINDLE (rst)	Display only	SPINDLE RUNNING (spindle motor rotation time display) mode (resettable) Accumulates the time during which the spindle is rotating, and displays the value by an hour. Resettable. By resetting it after replacing a spindle, the value can be used as a reference to when the next replacement should be
LOADING (rst)	Display only	LOADING COUNTER (number of times of disc insertion display) mode (resettable) Accumulates and displays the number of times of disc insertion. Resettable. By resetting it after replacing a loader assembly, the value can be used as a reference to when the next periodical replacement should be
SEEK (rst)	Display only	SEEK RUNNING (optical-head seek operation time display) mode (resettable) Accumulates the seek operation time of the optical head, and displays the value by an hour. Resettable. By resetting it after replacing a seek motor, the value can be used as a reference to when the next replacement should be

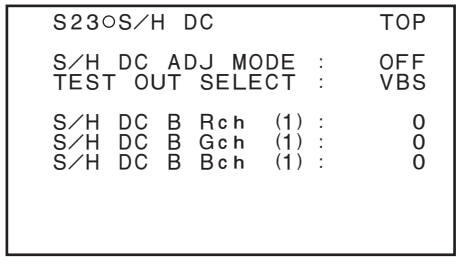
FUNCTION LIMIT



Item	Setting	Function
AF DISPLAY	OFF/ON	When the FUJINON PF lens (HA22×7.4BRD, HA13×4.5BRD) is used, turns ON/OFF the function that displays the AF detection window and the in-focus indicator on the viewfinder screen*

* : Turning ON/OFF the AF detection window, changing the area and turning ON/OFF the in-focus display are activated by the switch of the lens side. (For details, refer to the lens specifications.)
In-focus indicator display (displayed above F value display of lens on VF DISP) : ▲ Out of former focus
■ Just focus
▼ Out of post-focus

S/H DC



Item	Setting	Function
S/H DC ADJ MODE	OFF/ON	Turns ON/OFF the function that displays the dummy white spots (vertical bars) for adjustment on the screen (The dummy white spots are displayed in the order of R/G/B starting from the center of screen to the right) Adjusts the S/H DC B R-channel/G-channel/B-channel to the point where the dummy white spots are least visible on the screen (Adjusts them with the GAIN set in 12 dB)
TEST OUT SELECT	VBS/Y/R/G/B/LCD	Select the video signal to be output from the TEST OUT connector
S/H DC B R ch (1)	(–99 to 99)	Adjusts the sample-and-hold DC level of the R-channel*
S/H DC B G ch (1)	(–99 to 99)	Adjusts the sample-and-hold DC level of the G-channel*
S/H DC B B ch (1)	(–99 to 99)	Adjusts the sample-and-hold DC level of the B-channel*

* : If this adjustment is not made for optimum result, the troubles may occur such as thin vertical bars during the high gain mode or poor accuracy of white spot compensation.

BOARD INFO

```
  S24○BOARD INFO        TOP

 ○ SD REC & PB  (DVP)
 ○ 24P REC&PB  (DCPxx xx)
 ○ PROCYON-V   (DCPxx xx)

  TG VERSION : 1.400
```

Item	Setting	Function
SD REC & PB (DVP)	Display only	Displaying the diagnosis whether the installed DVP board supports the SD REC & PB Option or not (If cross mark (X) is indicated, the DVP board that does not support the SD REC&PB Option is installed. In such case, the SD REC&PB Option functions are disabled)
24P REC & PB (DCPxx xx)*	Display only	Displaying the diagnosis whether the installed DCP board supports the 24P REC & PB Option or not (If cross mark (X) is indicated, the DCP board that does not support the 24P REC&PB Option is installed. In such case, the 24P REC&PB Option functions are disabled)
PROCYON-V (DCPxx xx)*	Display only	Displaying the diagnosis whether the LSI (corresponding to the LSI: DCP2 on the DEV STATUS page) on the installed DCP board is PROCYON-V or not (If cross mark (X) is indicated, the DCP board on which ZXCV is mounted is installed)
TG VERSION	Display only	Indicating the ROM Version number of IC8/TG-260 board

∗ : The board name to be displayed is the name of the board that is actually installed.

SERVICE FILE

```
  S25○SERVICE FILE      TOP

  SVC FILE LOAD    :  EXEC
 →SVC FILE SAVE    :▷ EXEC

  F.ID: □□□□□□□□□□□□□□□□
```

Item	Setting	Function
SVC FILE LOAD	Press the MENU knob to execute this menu item	Loads the SERVICE file from the main unit or a memory stick
SVC FILE SAVE	Press the MENU knob to execute this menu item	Saves the SERVICE file in the main unit or a memory stick
F.ID	16 characters (alphanumeric characters symbols and spaces)	Sets the file ID (When the SVC FILE SAVE is executed, this ID is saved)

4-10. Drive Maintenance

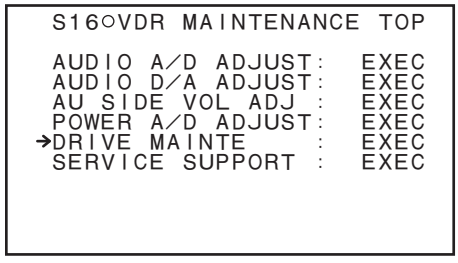
Used for the maintenance of the optical drive.

- Use an external monitor for the following items.
  "4-10-5. ACCELERATION SENSOR"
  "4-10-21. ACCELERATION OFFSET"
- The alignment disc (PFD23A-RS) is required for the following item.
  "4-10-16. SKEW"

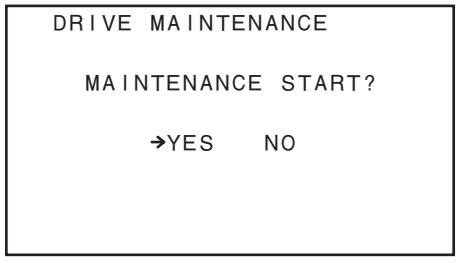
4-10-1. Basic Operation on Drive Maintenance Menus

Enter the drive maintenance menu from the SERVICE menu. (Refer to "4-9. SERVICE Menu".)
If a cartridge is remaining inside, it is ejected automatically.

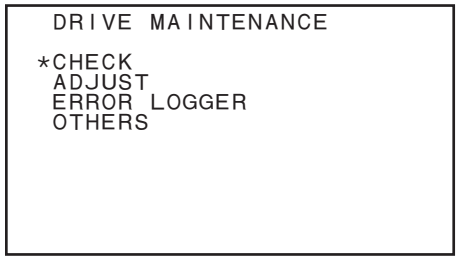
1. Select the "S16 VDR MAINTENANCE" on the SERVICE menu.
2. Select "DRIVE MAINTE" by turning the MENU knob, and press the MENU knob.


S16○VDR MAINTENANCE TOP
AUDIO A/D ADJUST: EXEC
AUDIO D/A ADJUST: EXEC
AU SIDE VOL ADJ : EXEC
POWER A/D ADJUST: EXEC
→DRIVE MAINTE : EXEC
SERVICE SUPPORT : EXEC

3. Select "YES" by turning the MENU knob, and press the MENU knob.



The drive maintenance menu is displayed.



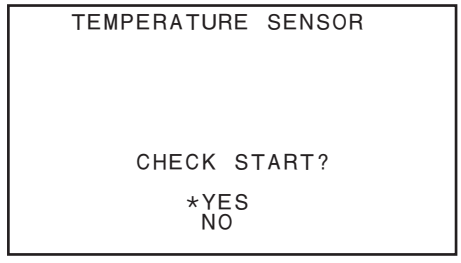
4-10-2. TEMPERATURE SENSOR

This menu allows you to check the temperature sensor on the optical drive.

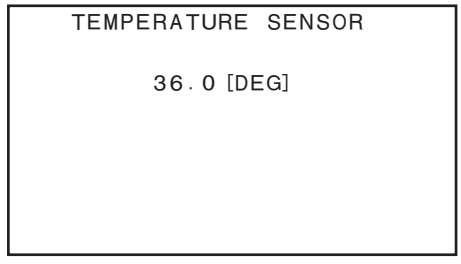
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [DEVICE]
→ [TEMPERATURE SENSOR]

1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob, and press the MENU knob.



The current temperature appears.



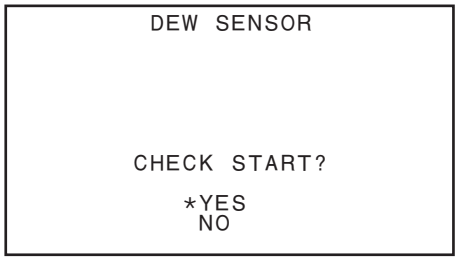
4-10-3. DEW SENSOR

This menu allows you to check the dew sensor on the optical drive.

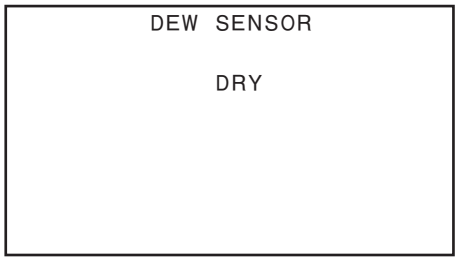
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [DEVICE]
→ [DEW SENSOR]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.



The result appears.



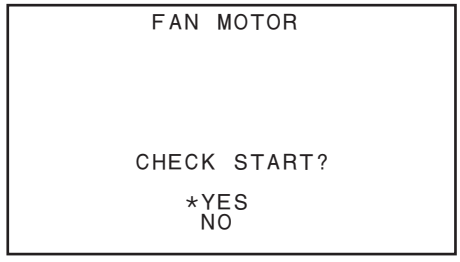
4-10-4. FAN MOTOR

This menu allows you to check the fan motor connected to the optical drive.

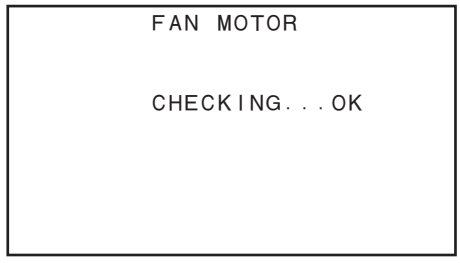
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [DEVICE]
→ [FAN MOTOR]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

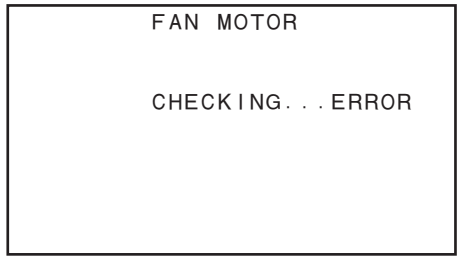


The result appears.



If failed:

The following screen appears.



4-10-5. ACCELERATION SENSOR

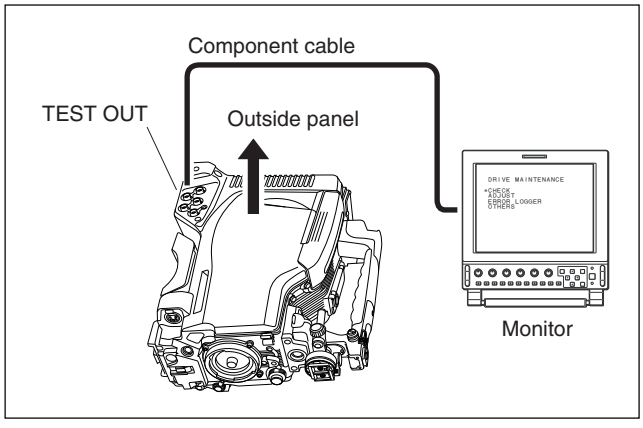
This menu allows you to check the acceleration sensor on the optical drive.

Note

Be sure to place the unit horizontally with the outside panel facing upward as shown in the figure when checking the sensor.
The check may be failed if the optical drive is incorrectly placed.

Preparation:

1. Place the unit with the outside panel facing upward as shown in the figure.
2. Connect the component cable to the TEST OUT connector and the monitor.
3. Select VIDEO OUT MENU from the VIDEO OUT page in the OPERATION menu.
   The menu appears on the connected monitor.



Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [DEVICE]
→ [ACCELERATION SENSOR]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

```
ACCELERATION SENSOR


CHECK START?

*YES
 NO
```

A confirmation screen appears.

3. Check that the unit is placed horizontally, and press the MENU knob.

```
ACCELERATION SENSOR


PLACE DRIVE
HORIZONTALLY

ARE YOU SURE?

*YES
 NO
```

When the optical drive is detected as horizontal, the following screen appears.

```
ACCELERATION SENSOR


      CHECKING...OK
SENSOR POSTURE:OK
```

If failed:

The following screen appears.
Check optical drive posture and sensor installation.

Note

CHECKING: Disconnection check result
SENSOR POSTURE: SENSOR POSTURE check result
If the disconnection check results in an error, the SENSOR POSTURE check is not carried out.

```
ACCELERATION SENSOR


      CHECKING...OK
SENSOR POSTURE:TILTING!
```

4-10-6. LOADER

This menu allows you to check loader operations.

Note

Check that the loader is correctly installed on the optical drive before starting the check.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [LOADER]

1. A confirmation screen appears.

```
          LOADER


      INSERT DISC


        POSITION:EJECT
        REC INHI:INHI
  DOWN SENSOR:NOT DOWN
  SENSOR HOLE:
```

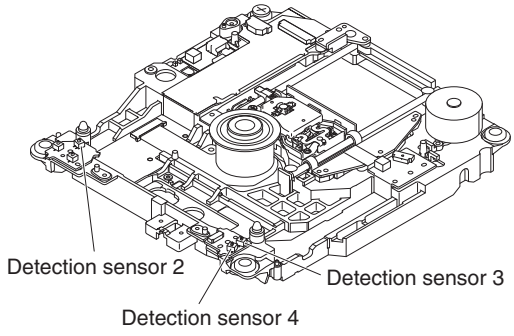
2. Insert a cartridge.
   The result appears.
   The loader moves to the DOWN position.

```
          LOADER


        CHECKING...OK   <-- Appears just for a moment


        POSITION:DOWN
        REC INHI:NOT INHI
  DOWN SENSOR:DOWN
  SENSOR HOLE:2 3 4
```

SENSOR HOLE

- When insert 23.3 GB SL disc such as PFD23A, the message “SENSOR HOLE:2 3 4” is displayed.
- When insert 50 GB SL disc such as PFD50LA, the message “SENSOR HOLE:3 4” is displayed.

In cases other than above, check the corresponding detection sensor because of possibility of failure.



If failed:

The following screen appears.

```
          LOADER


        CHECKING...ERROR


        POSITION:DOWN
        REC INHI:NOT INHI
  DOWN SENSOR:DOWN
  SENSOR HOLE:2 3 4
```

The following describes four procedures:

- Moving DOWN Position to EJECT Position
- Moving DOWN Position to STBY Position
- Moving STBY Position to EJECT Position
- Moving STBY Position to DOWN Position

Moving DOWN Position to EJECT Position

1. The item selection screen appears.
2. Press the MENU knob.

```
          LOADER


    *MOVE TO EJECT POS
     MOVE TO STBY POS

       POSITION:DOWN
       REC INHI:INHI
    DOWN SENSOR:DOWN
    SENSOR HOLE:2 3 4
```

   A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.

```
          LOADER


      MOVE TO EJECT POS


         CHECK START?

            *YES
             NO
```

   The result appears.
   The loader moves to the EJECT position to eject the cartridge.

```
          LOADER


        CHECKING...OK  <-- Appears just for a moment

       POSITION:EJECT
       REC INHI:INHI
    DOWN SENSOR:NOT DOWN
    SENSOR HOLE:
```

If failed:

The following screen appears.

```
          LOADER


        CHECKING...ERROR

       POSITION:DOWN
       REC INHI:INHI
    DOWN SENSOR:DOWN
    SENSOR HOLE:2 3 4
```

Moving DOWN Position to STBY Position

1. The item selection screen appears.
2. Select “MOVE TO STBY POS” by turning the MENU knob, and press the MENU knob.

```
          LOADER


     MOVE TO EJECT POS
    *MOVE TO STBY POS

       POSITION:DOWN
       REC INHI:INHI
    DOWN SENSOR:DOWN
    SENSOR HOLE:2 3 4
```

   A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.

```
          LOADER


      MOVE TO STBY POS


         CHECK START?

            *YES
             NO
```

   The result appears.
   The loader moves to the STBY position.

```
          LOADER


        CHECKING...OK  <-- Appears just for a moment

       POSITION:STBY
       REC INHI:INHI
    DOWN SENSOR:NOT DOWN
    SENSOR HOLE:
```

If failed:

The following screen appears.

```
          LOADER


        CHECKING...ERROR

       POSITION:DOWN
       REC INHI:INHI
    DOWN SENSOR:DOWN
    SENSOR HOLE:2 3 4
```

Moving STBY Position to EJECT Position

1. The item selection screen appears.
2. Press the MENU knob.

```
          LOADER


   *MOVE TO EJECT POS
    MOVE TO DOWN POS

      POSITION:STBY
      REC INHI:INHI
DOWN SENSOR:NOT DOWN
SENSOR HOLE:
```

   A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.

```
          LOADER


     MOVE TO EJECT POS


        CHECK START?

           *YES
            NO
```

   The result appears.
   The loader moves to the EJECT position to eject the cartridge.

```
          LOADER


        CHECKING...OK  <-- Appears just for a moment

      POSITION:EJECT
      REC INHI:INHI
DOWN SENSOR:NOT DOWN
SENSOR HOLE:
```

If failed:

The following screen appears.

```
          LOADER


       CHECKING...ERROR


      POSITION:STBY
      REC INHI:INHI
DOWN SENSOR:NOT DOWN
SENSOR HOLE:
```

Moving STBY Position to DOWN Position

1. The item selection screen appears.
2. Select “MOVE TO DOWN POS” by turning the MENU knob, and press the MENU knob.

```
          LOADER


     MOVE TO EJECT POS
   *MOVE TO DOWN POS

      POSITION:STBY
      REC INHI:INHI
DOWN SENSOR:NOT DOWN
SENSOR HOLE:
```

   A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.

```
          LOADER


     MOVE TO DOWN POS


        CHECK START?

           *YES
            NO
```

   The result appears.
   The loader moves to the DOWN position.

```
          LOADER


        CHECKING...OK  <-- Appears just for a moment

      POSITION:DOWN
      REC INHI:INHI
DOWN SENSOR:DOWN
SENSOR HOLE:2 3 4
```

If failed:

The following screen appears.

```
          LOADER


       CHECKING...ERROR


      POSITION:STBY
      REC INHI:INHI
DOWN SENSOR:NOT DOWN
SENSOR HOLE:
```

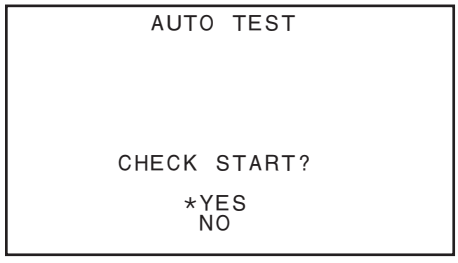
4-10-7. SLIDER-AUTO TEST

This menu allows you to check optical block assembly operations and the limit sensor.

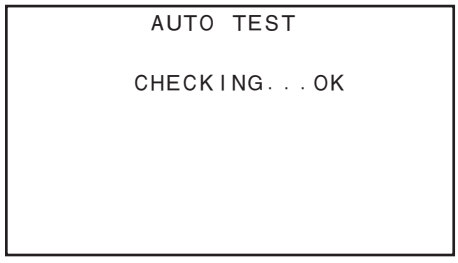
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [SLIDER]
→ [AUTO TEST]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

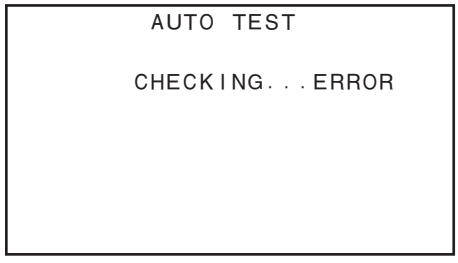


The result appears.



If failed:

The following screen appears.



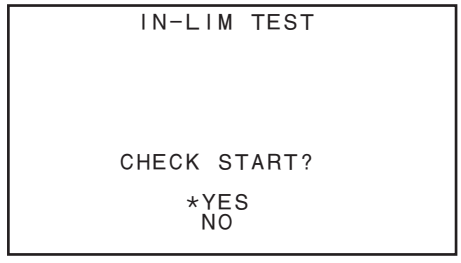
4-10-8. IN-LIM TEST

This menu allows you to move the optical block assembly to the inner-limit position of the disc.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [SLIDER]
→ [IN-LIM TEST]

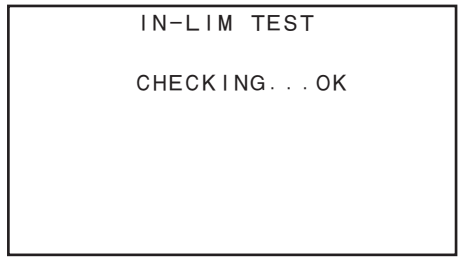
1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.



The result appears.

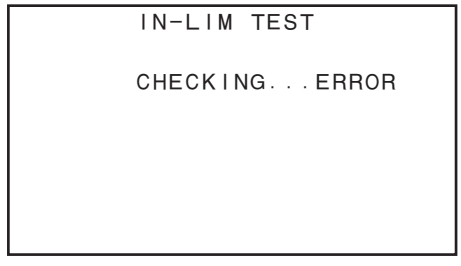
Note

Check visually that the optical block assembly moves to the inner-limit position.



If failed:

The following screen appears.



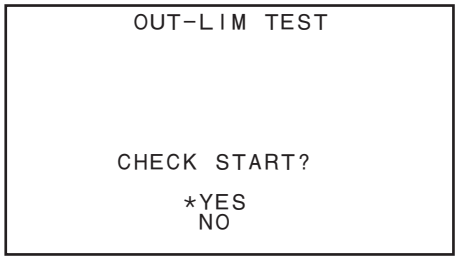
4-10-9. OUT-LIM TEST

This menu allows you to move the optical block assembly to the outer-limit position of the disc.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [SLIDER]
→ [OUT-LIM TEST]

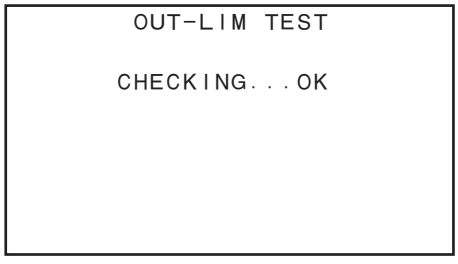
1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob, and press the MENU knob.



The result appears.

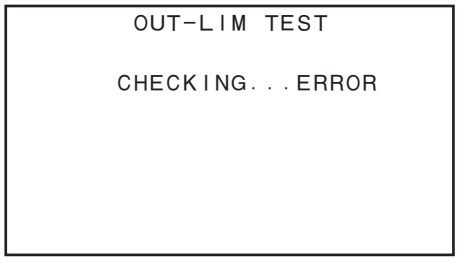
Note

Check visually that the optical block assembly moves to the outer-limit position.



If failed:

The following screen appears.



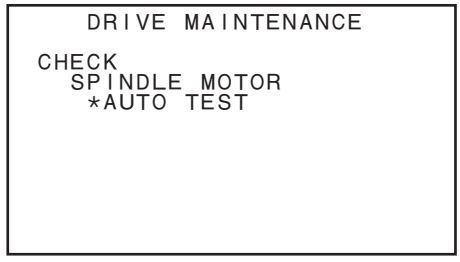
4-10-10. SPINDLE MOTOR-AUTO TEST

This menu allows you to check spindle motor operations.

Menu hierarchy:

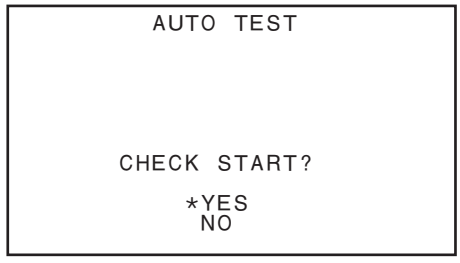
[DRIVE MAINTENANCE]
→ [CHECK]
→ [SPINDLE MOTOR]

1. A confirmation screen appears.
2. Press the MENU knob.

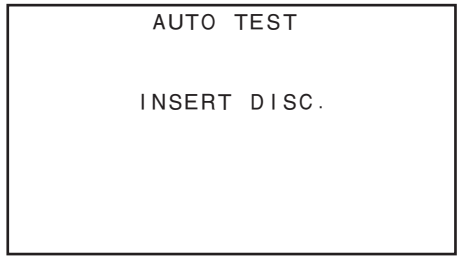


A confirmation screen appears.

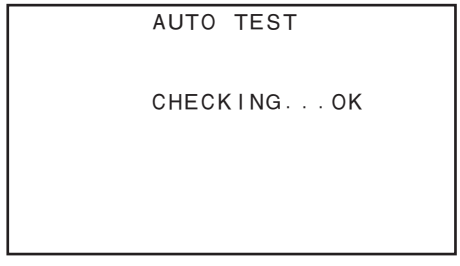
3. Select "YES" by turning the MENU knob, and press the MENU knob.



A screen to insert a cartridge appears.



4. Insert a cartridge.
   The result appears.



If failed:

The following screen appears.

```
AUTO TEST

CHECKING...ERROR
```

4-10-11. FOCUS ACTUATOR

This menu allows you to check the focus of the 2-axis actuator.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [FOCUS ACTUATOR]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

```
FOCUS ACTUATOR

CHECK START?
*YES
 NO
```

Check that the 2-axis actuator moves several times.

- If the actuator does not move or its movement is not smooth, the harness may be connected improperly or the optical block may be defective.

The result appears.

```
FOCUS ACTUATOR

CHECKING...OK
```

If failed:

The following screen appears.

```
FOCUS ACTUATOR

CHECKING...ERROR
```

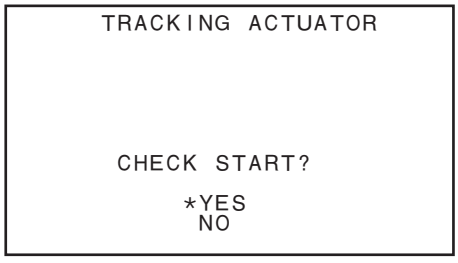
4-10-12. TRACKING ACTUATOR

This menu allows you to check the tracking of the 2-axis actuator.

Menu hierarchy:

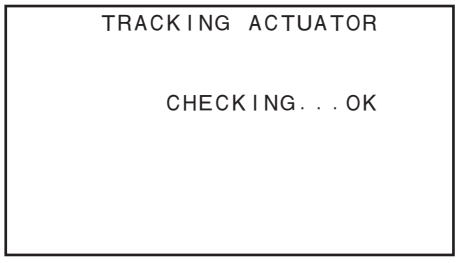
[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [TRACKING ACTUATOR]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.



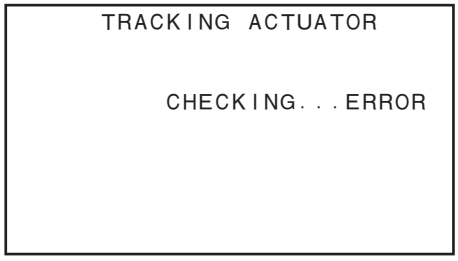
Check that the 2-axis actuator moves several times.
- If the actuator does not move or its movement is not smooth, the harness may be connected improperly or the optical block may be defective.

The result appears.



If failed:

The following screen appears.



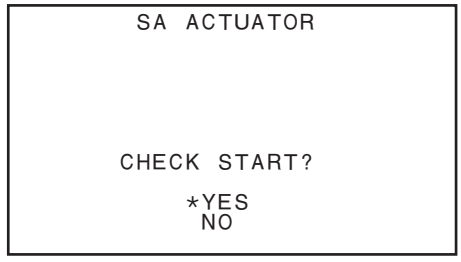
4-10-13. SA ACTUATOR

This menu allows you to check the SA actuator motor.

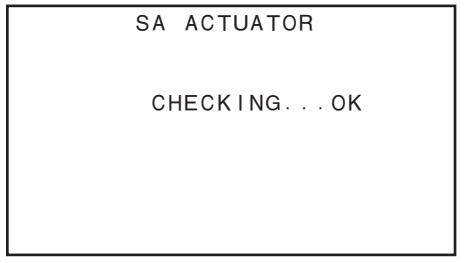
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [SA ACTUATOR]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

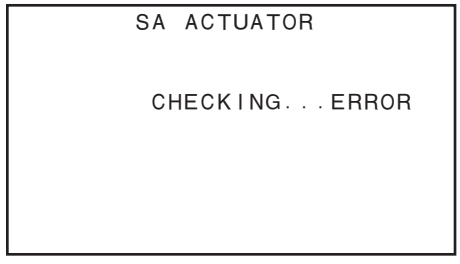


The result appears.



If failed:

The following screen appears.
The harness may be connected improperly or the optical block may be defective.



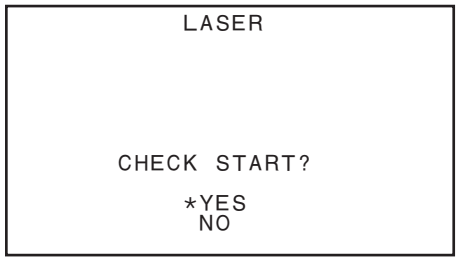
4-10-14. LASER

This menu allows to check the laser.

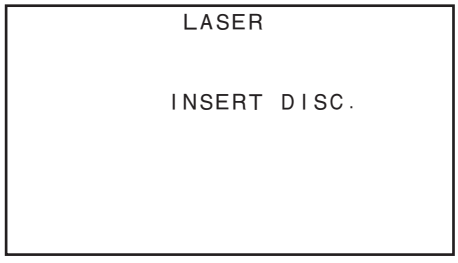
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [LASER]

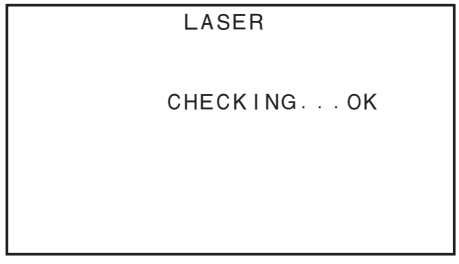
1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.



A screen to insert a cartridge appears.

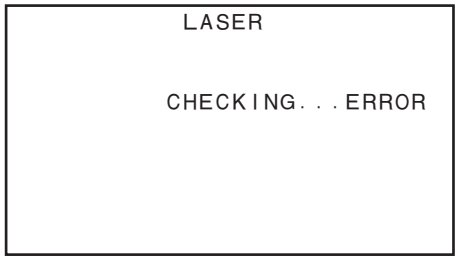


3. Insert a cartridge.
The result appears.



If failed:

The following screen appears.



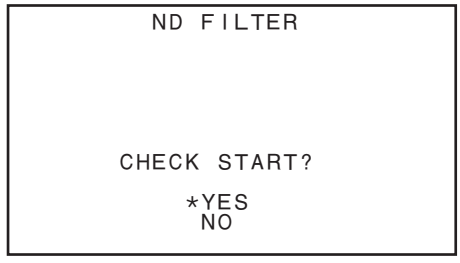
4-10-15. ND FILTER

This menu allows you to check the ND filter.

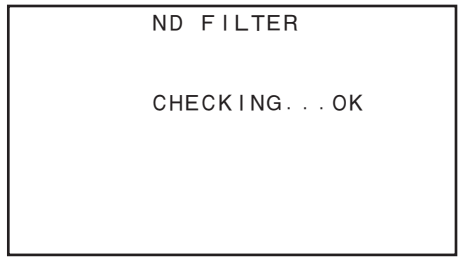
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [OPTICAL BLOCK]
→ [ND FILTER]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

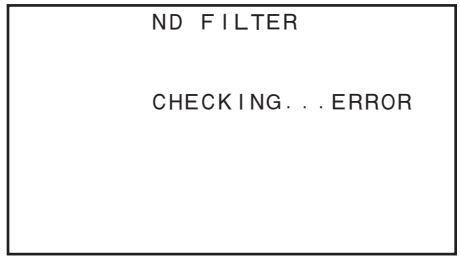


The result appears.



If failed:

The following screen appears.



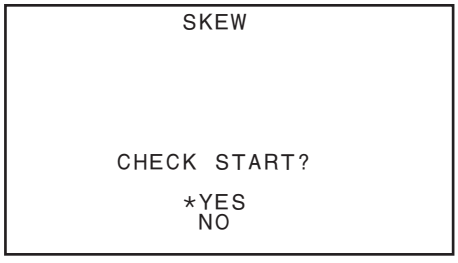
4-10-16. SKEW

This menu allows you to check the skew.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [SKEW]

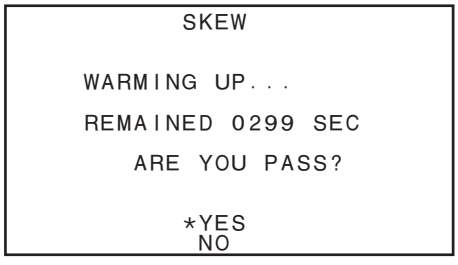
1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.



A warm-up screen appears.

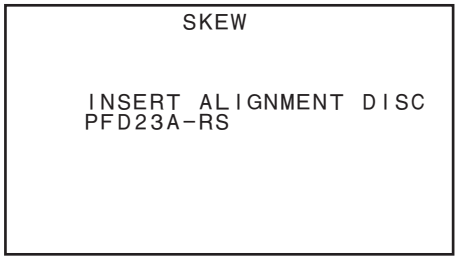
Note

If five minutes has already passed since power ON, this screen appears just for a moment.

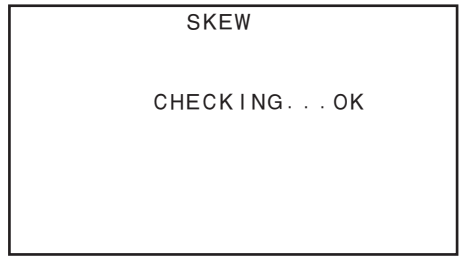


If the power has been supplied to the unit for over five minutes, you can select YES and proceed to the next step even after you turn off the power and then turn it back on.

3. A confirmation screen appears when “0000 SEC” is displayed.

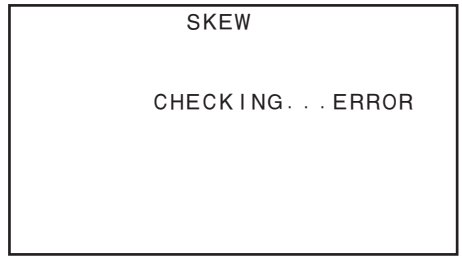


4. Insert the alignment disc.
5. Press the MENU knob.
   The result appears.



If failed:

The following screen appears.
Perform optical drive alignment. (Refer to Section 8.)



4-10-17. LENS CLEANING

This menu allows you to clean the lens.

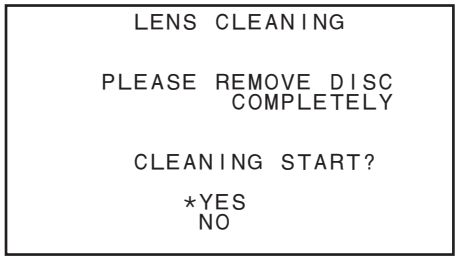
Note

Before cleaning, be sure to unload the disc from the unit. If the disc remains at the loading slot, cleaning will not be finished completely.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [CHECK]
→ [LENS CLEANING]

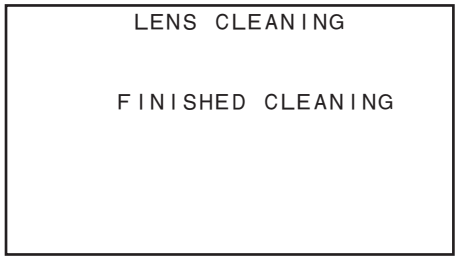
1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob.



Note

Check that no disc is remaining in the unit.

3. Check that no disc is remaining, and then press the MENU knob.
   The result appears.



4-10-18. SERVO_1

This menu allows you to adjust the offset and gain of the signal circuit for servo error detection.
(Refer to "Section 8 Optical Drive Alignment" for details.)

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ADJUST]
→ [SERVO_1]

4-10-19. SKEW

This menu allows you to skew adjustment.
Remove the loader assembly before executing this menu.
(Refer to "Section 8 Optical Drive Alignment" for details.)

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ADJUST]
→ [SKEW]

4-10-20. SERVO_2

This menu allows you to adjust TE/CE BLOCK, and SV LOOP GAIN necessary for servo operation. (Refer to "Section 8 Optical Drive Alignment" for details.)

Note

Be sure to install the loader. The adjustments are not available if the loader is not installed.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ADJUST]
→ [SERVO_2]

4-10-21. ACCELERATION OFFSET

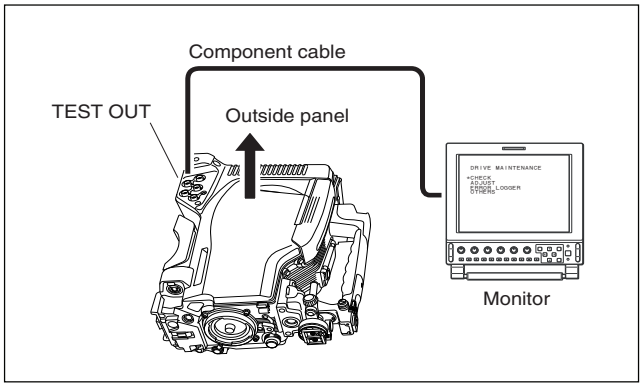
This menu allows you to perform the offset adjustment of the acceleration sensor.

Note

Be sure to place the unit horizontally with the outside panel facing upward as shown in the figure when checking the sensor.
The servo operation is not ensured if the optical drive is incorrectly placed.

Preparation:

1. Place the unit with the outside panel facing upward as shown in the figure.
2. Connect the component cable to the TEST OUT connector and the monitor.
3. Select VIDEO OUT MENU from the VIDEO OUT page in the OPERATION menu.
   The menu appears on the connected monitor.



Menu hierarchy:

[DRIVE MAINTENANCE]
→ [ADJUST]
→ [OTHER ADJUST]
→ [ACCELERATION OFFSET]

1. A confirmation screen appears.
2. Select “YES” by turning the MENU knob, and press the MENU knob.

```
ACCELERATION OFFSET


ADJUST START?
*YES
 NO
```

The result appears.

3. Select “YES” by turning the MENU knob, and press the MENU knob.

```
ACCELERATION OFFSET


PLACE DRIVE
HORIZONTALLY.
ARE YOU SURE?
*YES
 NO
```

A confirmation screen appears.

```
ACCELERATION OFFSET


ADJUSTING...COMPLETED
```

If failed:

The following screen appears.

```
ACCELERATION OFFSET


ADJUSTING...FAILED
```

4-10-22. ERROR LOGGER

This menu allows you to delete registered error logs.

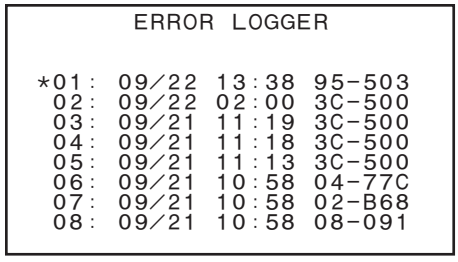
Notes

- DRIVE ERROR and DRIVE WARNING are recorded.
- Up to 16 pieces of log data are displayed.
  The following data is overwritten on the existing data from the oldest.

Menu hierarchy:

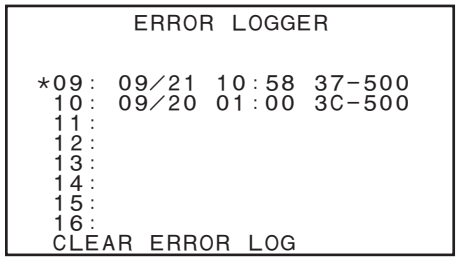
[DRIVE MAINTENANCE]
→ [ERROR LOGGER]

1. Displayed the error log list.
2. Select a desired error number using the MENU knob.

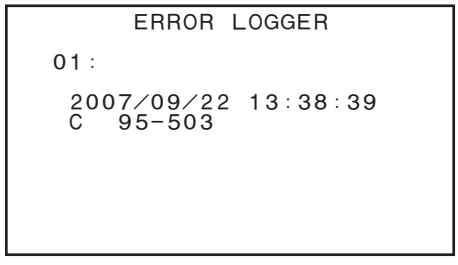


Note

To change the display to the next screen, by turning the MENU knob.

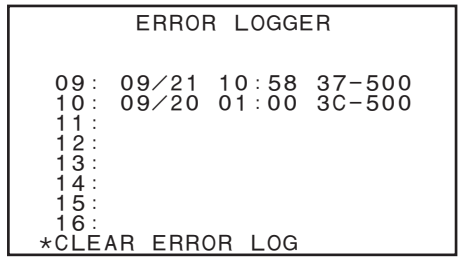


3. Press the MENU knob.
   Detailed information of the selected error appears.

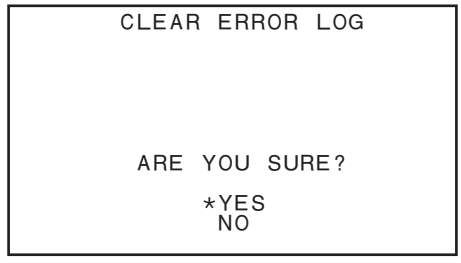


Clearing Error Log

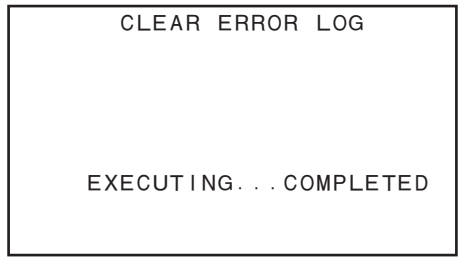
1. Display the error log list.
2. Select "CLEAR ERROR LOG" by turning the MENU knob, and press the MENU knob.



   A confirmation screen appears.
3. Select "YES" by turning the MENU knob, and press the MENU knob.

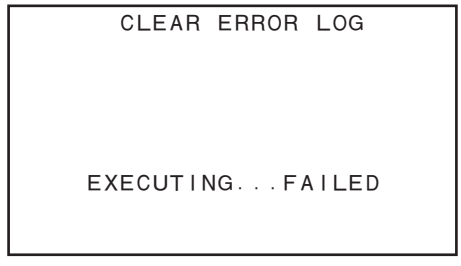


   The result appears.



If failed:

The following screen appears.

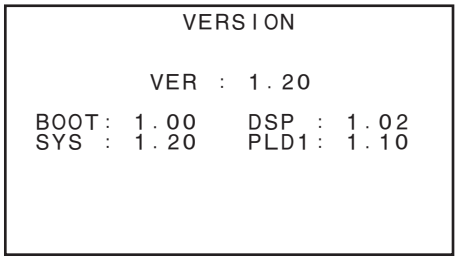


4-10-23. VERSION

This menu displays the version of the optical drive.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [VERSION]

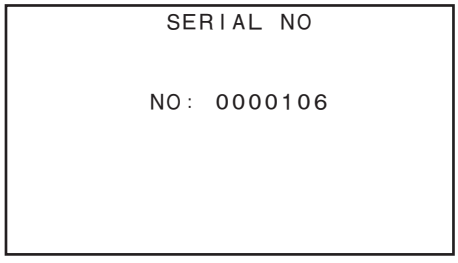


4-10-24. SERIAL NO

This menu displays the serial number of the optical drive.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [SERIAL NO]



4-10-25. CLEAR MEDIA LOG

This menu allows you to delete the log of media.
(Refer to "8-6. Cleaning Media Log" for details.)

Note

Once deleted, the deleted log cannot be restored.

Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [CLEAR MEDIA LOG]

4-10-26. UPLOAD TO EEPROM

This menu allows you to update the EEPROM (IC4) information backed up on the SE-857 board when only IC4 is replaced.

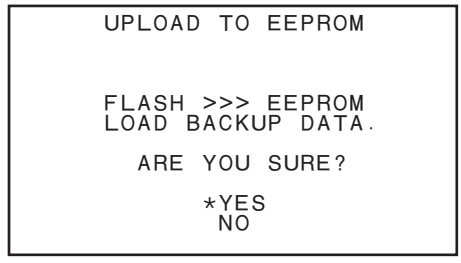
Note

When replacing the SE-857 board, remove the EEPROM (IC4) from the board, and then mount it on the new board. This menu is not necessary.
Execute this menu only when IC4 is replaced solely.

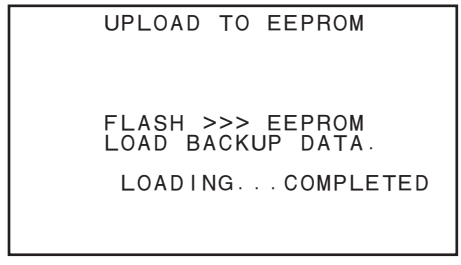
Menu hierarchy:

[DRIVE MAINTENANCE]
→ [OTHERS]
→ [MEMORY SUPPORT]
→ [UPLOAD TO EEPROM]

1. A confirmation screen appears.
2. Select "YES" by turning the MENU knob, and press the MENU knob.

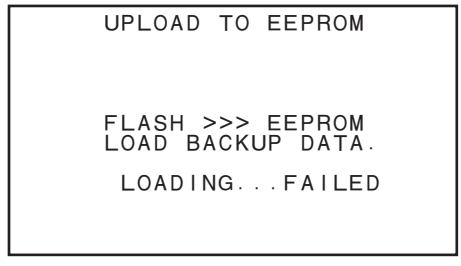


The result appears.



If failed:

The following screen appears.



4-11. AUDIO A/D Error Correction

Before starting adjustment, refer to “9-1. Preparation”.

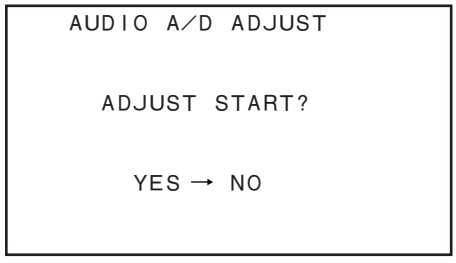
Fixtures and Equipment

For more details, refer to “1-10-2. Measuring Equipment”.

- Signal generator

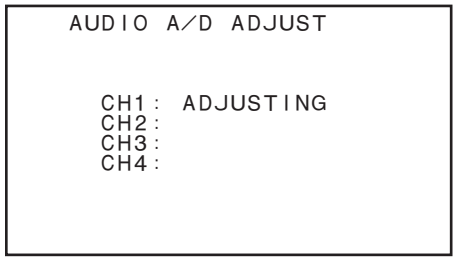
Adjustment Procedure

1. Input the sine wave of +4 dBu of 1 kHz to the AUDIO IN CH1 connector and CH2 connector on the rear.
2. Execute AUDIO A/D ADJUST of the VDR MAINTENANCE page of the SERVICE menu.

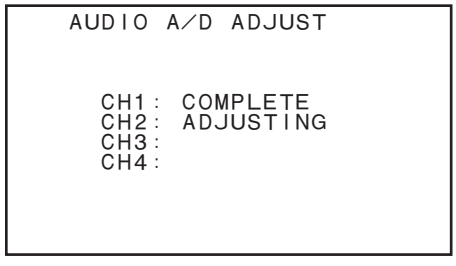


3. Select “YES” by turning the MENU knob, and press the MENU knob.
   The auto adjustment starts. The following screens are displayed during the adjustment.

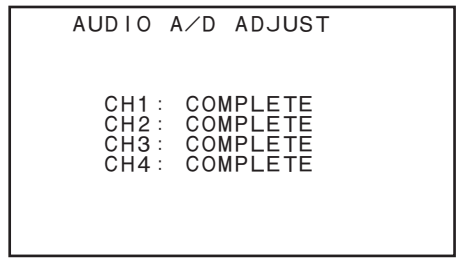
   - Screen displayed when CH1 is being adjusted



   - Screen displayed when CH1 is finished and CH2 is being adjusted



   - Screen displayed when all CH is are finished



4. Press down the MENU ESCAPE switch when the adjustment is complete.
5. Turn off the power of this equipment once and back on again. The error is corrected.

Notes

- If “TIME OVER ERR” is indicated on the adjustment screen, check the menu setting, switch setting and others, and re-execute the adjustment.
- If “INPUT OVER ERR” is indicated on the adjustment screen, check the signal level, since the input signal level may be too high.
- If “INPUT UNDER ERR” is indicated on the adjustment screen, check the signal level, since the input signal level may be too low.
- If “NO INPUT ERR” is indicated on the adjustment screen, check the input signal, since the signal may not be input correctly.

4-12. AUDIO D/A Error Correction

Before starting adjustment, refer to “9-1. Preparation”.

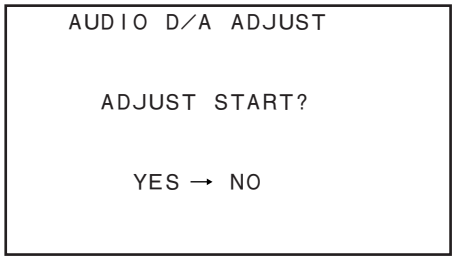
Fixtures and Equipment

For more details, refer to “1-10-2. Measuring Equipment”.

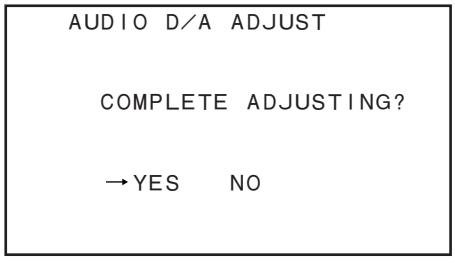
• Audio level-meter

Adjustment Procedure

1. Execute AUDIO D/A ADJUST of the VDR MAINTENANCE page of the SERVICE menu.



2. Select “YES” by turning the MENU knob, and press the MENU knob.
3. Turn the AUDIO LEVEL knob of CH1 so that the output level of CH1 becomes 0 dBu ±0.05 dB.
4. Turn the AUDIO LEVEL knob of CH2 so that the output level of CH2 becomes 0 dBu ±0.05 dB.



5. Select “YES” by turning the MENU knob, and press the MENU knob.

Note

When “NO” is selected, the data adjusted this time becomes invalid, and the previous adjustment value becomes valid.

6. Press down the MENU ESCAPE switch when the adjustment is complete.
7. Turn off the power of this equipment once and back on again. The error is corrected.

4-13. AUDIO LEVEL Volume Compensation

Before starting adjustment, refer to “9-1. Preparation”.

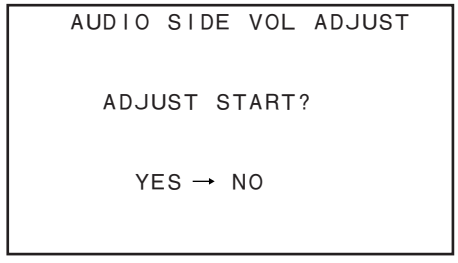
Fixtures and Equipment

For more details, refer to “1-10-2. Measuring Equipment”.

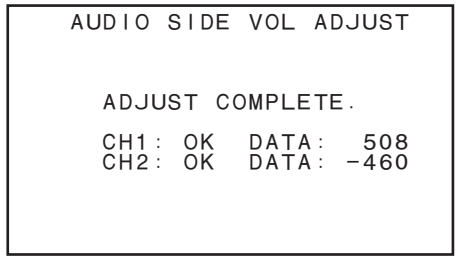
• Signal generator

Adjustment Procedure

1. Input the sine wave of +4 dBu of 1 kHz to the AUDIO IN CH1 connector and CH2 connector on the rear.
2. Align the LEVEL knobs of CH1 and CH2 to the position one scale left of the mechanical center position.
3. Execute AU SIDE VOL ADJ. of the VDR MAINTENANCE page of the SERVICE menu.



4. Select “YES” by turning the MENU knob, and press the MENU knob.



5. Press down the MENU ESCAPE switch when the adjustment is complete.
6. Turn off the power of this equipment once and back on again. The error is corrected.

Note

If the adjustment result screen shows “NG”, execute the adjustment from step 3 again. When “NG” reappears, replace the variable resister (RV1 or RV2 on the FP-157 board) of the LEVEL knob.

4-14. Adjusting Battery End Detection Voltage

Before starting adjustment, refer to “9-1. Preparation”.

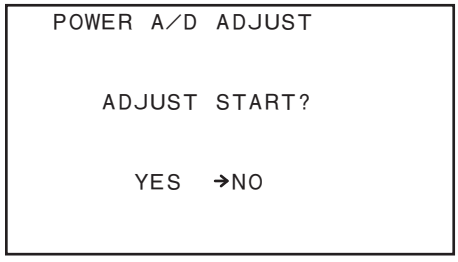
Devices and tools

For more details, refer to “1-10-2. Measuring Equipment”.

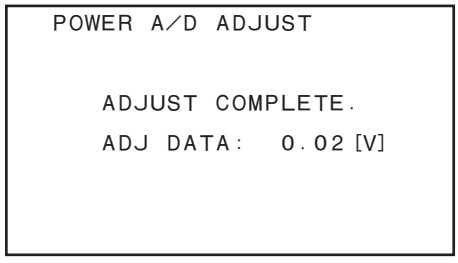
- Rated voltage power source (one that can output at least 10 A)
- Digital voltmeter
- Blank disc

Adjustment Procedure

1. Supply a +12 V voltage to the DC IN connector.
2. Insert a blank disc for recording into the unit, press the REC START button, and begin recording.
3. Execute POWER A/D ADJUST from the page of VDR MAINTENANCE of the SERVICE menu.



4. Turn the MENU knob to select “YES” and press the MENU knob.



5. After adjustment finishes, press down on the MENU ESCAPE switch.

Note

If the message “ADJUST ERROR” appears in the adjustment result menu, recheck whether a +12 V voltage is supplied to the DC IN connector and repeat the adjustment from step 3.

4-15. SERVICE SUPPORT Menu

Displays the error log for all errors except for the ones that occur in the optical drive block.

Procedure

1. Execute SERVICE SUPPORT from the VDR MAINTENANCE page of the SERVICE menu.

```
  SERVICE SUPPORT

→DISPLAY ERR LOG  :  EXEC
 CLEAR ERR LOG    :  EXEC
```

2. Turn the MENU knob to select “DISPLAY ERR LOG” and press the MENU knob.
3. Turn the MENU knob to move the arrow so that it points to the error code that you want to view in more detail.

```
  DISPLAY ERR LOG

                (003/0027)   ← *
 001 ERROR-XX-XXX:  EXEC
 002 ERROR-XX-XXX:  EXEC
→003 ERROR-XX-XXX:  EXEC
 004 ERROR-XX-XXX:  EXEC
 005 ERROR-XX-XXX:  EXEC
 006 ERROR-XX-XXX:  EXEC
 007 ERROR-XX-XXX:  EXEC
 008 ERROR-XX-XXX:  EXEC
 009 ERROR-XX-XXX:  EXEC
```

∗ : (Selected log No./total number of logs)

4. Press the MENU knob to display the detailed menu.

```
  DISPLAY ERROR LOG

  ERROR:XX-XXX  (003/0027)

  DATE  :  MM/DD HH:MM:SS   ← ∗1
  TC    :  00:00:00:00      ← ∗2

    2008/MM/DD HH:MM:SS     ← ∗3
```

∗1 : (Date when the error has occurred)
∗2 : (TC value when the error has occurred)
∗3 : (Current data and time)

Clearing the Error Log

Note

Normally, do not clear the error log. The error log is useful when trying to fix problems that have occurred.
The error log can contain important information for solving these problems.

Procedure

1. Execute SERVICE SUPPORT from the page of VDR MAINTENANCE of the SERVICE menu.

```
  SERVICE SUPPORT

→DISPLAY ERR LOG  :  EXEC
 CLEAR ERR LOG    :  EXEC
```

2. Turn the MENU knob to select “CLEAR ERR LOG” and press the MENU knob.
3. Turn the MENU knob to select “YES” or “NO” and press the MENU knob.

```
  CLEAR ERROR LOG

     CLEAR ALL DATA?

        YES  →NO
```

Do not clear the log (NO):
The screen returns to the SERVICE SUPPORT menu.
Clear the log (YES):
The screen changes to the following screen and returns to the SERVICE SUPPORT menu after two seconds.

```
  CLEAR ERROR LOG

     EXECUTING.
```

4-16. Setup Menu List

The data that is set by the Setup menu can be saved in files. (Refer to Section 5 for the details of the file system.)
This section shows the list covering all the items of the setup menu. The following list shows the respective default settings when the unit was shipped from the factory and the destination files to which the respective menu items can be saved.

F-SET : Indicates the default setting when the unit was shipped from the factory.
ALL : Indicates the items that can be saved when the ALL FILE SAVE is executed. The items are indicated by the symbols.
PRST: Indicates the items that can be preset when the ALL PRESET is executed. The items are indicated by the symbols.
SCN: Indicates the items that can be saved in the SCENE file when the SCENE STORE is executed. The items are indicated by the symbols.
REF: Indicates the items that can be saved in the REFERENCE file when the REFERENCE SAVE/STORE is executed. The items are indicated by the symbols.
LENS : Indicates the items that can be saved in the LENS file when the LENS FILE STORE is executed. The items are indicated by the symbols.
STD : The items that are returned to the standard setup (PRESET value) when the STANDARD submenu is clicked.
Power OFF : Indicates the items that return to the default setting when the unit was shipped from the factory at power-off.
SVC : Indicates the item that can be saved in the service when the SVC FILE SAVE is executed. The items are indicated by the symbols.

Symbols

◎ : Can be saved. (The menu display value remains as it is even after saving.)
○ : Can be saved. (The menu display value becomes 0 when it is saved.)
× : Cannot be saved.
△ : Saved with the factory default setting regardless of the current setting. (If the setting value is changed in the Service mode, the setting value in the Service mode returns to the default value when the power is turned off.)
▲ : Virtually invalid because the operation is prohibited.
● : Can be saved only when executed from Remote.

Note

The items that have the crossing mark × (cannot be saved) in their ALL and PRESET columns, can be the target of the USER file and USER PRESET if the items are located in the USER menu. However, the items that return to the default setting when the unit was shipped from the factory at power-OFF, are excluded from the target.

1. OPERATION Menu (1/5)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	OUTPUT 1	SDI OUT 1 SELECT	OFF	◎	◎	×	×	×	×		◎
		SDI OUT 2 SELECT	OFF	◎	◎	×	×	×	×		◎
		SDI OUT 2 SUPER	OFF	◎	◎	×	×	×	×		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		TEST OUT SUPER	OFF	◎	◎	×	×	×	×		◎
02	OUTPUT 2	LIVE & PLAY	OFF	◎	◎	×	×	×	×		◎
		DOWN CON MODE	CROP	◎	◎	×	×	×	×		◎
		WIDE ID	THROU	◎	◎	×	×	×	×		◎
03	SUPERIMPOSE	SUPER(VFDISP)	ON	◎	◎	×	×	×	×		◎
		SUPER(MENU)	ON	◎	◎	×	×	×	×		◎
		SUPER(TC)	OFF	◎	◎	×	×	×	×		◎
		SUPER(MARKER)	OFF	◎	◎	×	×	×	×		◎
04	LCD	LCD COLOR	0	◎	○	×	×	×	×		◎
		LCD MARKER&ZEBRA	ON	◎	◎	×	×	×	×		◎
05	REC FUNCTION	CACHE/INTVAL REC	OFF	◎	◎	×	×	×	×	It is set to OFF when A. INT/M. INT is selected.	◎
		CACHE REC TIME	0-2S	◎	◎	×	×	×	×		◎
		TAKE TOTAL TIME	5MIN	◎	◎	×	×	×	×		◎
		REC TIME	5SEC	◎	◎	×	×	×	×		◎
		PRE-LIGHTING	OFF	◎	◎	×	×	×	×		◎
		NUMBER OF FRAME	1*	◎	◎	×	×	×	×		◎
		TRIGGER INTERVAL	M	◎	◎	×	×	×	×		◎
		DISC EXCHG CACHE	OFF	◎	◎	×	×	×	×		◎
		CLIP CONT REC	OFF	◎	◎	×	×	×	×		◎
06	ASSIGNABLE SW	ASSIGN SW <1>	OFF	◎	◎	×	×	×	×		◎
		ASSIGN SW <2>	OFF	◎	◎	×	×	×	×		◎
		ASSIGN SW <3>	OFF	◎	◎	×	×	×	×		◎
		ASSIGN SW <4>	OFF	◎	◎	×	×	×	×		◎
		ASSIGN SW <RET>	RET	◎	◎	×	×	×	×		◎
		COLOR TEMP SW	T5600	◎	◎	×	×	×	×		◎
		ZOOM SPEED	20	◎	◎	×	×	×	×		◎
		RETURN VIDEO	OFF	◎	◎	×	×	×	×		◎
07	POWER SAVE	ETHERNET/USB	DSABL	◎	◎	×	×	×	×		◎
		i.LINK(FAM)	DSABL	◎	◎	×	×	×	×		◎
		REC AUDIO OUT	EE	◎	◎	×	×	×	×		◎
		TEST OUT SAVE	ON	◎	◎	×	×	×	×		◎

* : Initial value is 2 when SYSTEM LINE is 720 and REC FORMAT is HD422/HD420.

OPERATION Menu (2/5)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
08	VF DISP 1	VF DISP	ON	◎	◎	×	×	×	×		×
		VF DISP MODE	3	◎	◎	×	×	×	×		◎
		DISP EXTENDER	ON	◎	◎	×	×	×	×		◎
		DISP FILTER	ON	◎	◎	×	×	×	×		◎
		DISP WHITE	ON	◎	◎	×	×	×	×		◎
		DISP GAIN	ON	◎	◎	×	×	×	×		◎
		DISP SHUTTER	ON	◎	◎	×	×	×	×		◎
		DISP AUDIO	ON	◎	◎	×	×	×	×		◎
		DISP DISC	ON	◎	◎	×	×	×	×		◎
		DISP IRIS	ON	◎	◎	×	×	×	×		◎
09	VF DISP 2	DISP ZOOM	ON	◎	◎	×	×	×	×		◎
		DISP COLOR TEMP	OFF	◎	◎	×	×	×	×		◎
		DISP BATT REMAIN	INT	◎	◎	×	×	×	×		◎
		DISP DC IN	OFF	◎	◎	×	×	×	×		◎
		DISP 16:9/4:3 ID	OFF	◎	◎	×	×	×	×		◎
		DISP WRR RF LVL	OFF	◎	◎	×	×	×	×		◎
		DISP REC FORMAT	OFF	◎	◎	×	×	×	×		◎
		DISP CLIP NO(PB)	ON	◎	◎	×	×	×	×		◎
		DISP TIME CODE	OFF	◎	◎	×	×	×	×		◎
		DISP ALAC	OFF	◎	◎	×	×	×	×		◎
10	VF DISP 3	LOW LIGHT	OFF	◎	◎	×	×	×	×		◎
		LOW LIGHT LEVEL	0	◎	○	×	×	×	×		◎
		VF BATT WARNING	10%	◎	◎	×	×	×	×		◎
		ABSOLUTE VALUE	OFF	◎	◎	×	×	×	×		◎
11	'!' LED	GAIN <!>	ON	◎	◎	×	×	×	×		◎
		SHUTTER <!>	ON	◎	◎	×	×	×	×		◎
		WHT PRESET <!>	ON	◎	◎	×	×	×	×		◎
		ATW RUN <!>	ON	◎	◎	×	×	×	×		◎
		EXTENDER <!>	ON	◎	◎	×	×	×	×		◎
		FILTER <!>	OFF	◎	◎	×	×	×	×		◎
		OVERRIDE <!>	ON	◎	◎	×	×	×	×		◎
12	MARKER 1	MARKER	OFF	◎	◎	×	×	×	×		◎
		CENTER	OFF	◎	◎	×	×	×	×		◎
		CENTER MARK	3	◎	◎	×	×	×	×		◎
		SAFETY ZONE	OFF	◎	◎	×	×	×	×		◎
		SAFETY AREA	90%	◎	◎	×	×	×	×		◎
		ASPECT	OFF	◎	◎	×	×	×	×		◎
		ASPECT SELECT	4 : 3	◎	◎	×	×	×	×		◎
		ASPECT MASK	ON	◎	◎	×	×	×	×		◎
		ASPECT MASK LVL	12	◎	◎	×	×	×	×		◎
		100% MARKER	OFF	◎	◎	×	×	×	×		◎

OPERATION Menu (3/5)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
13	MARKER 2	USER BOX	OFF	◎	◎	×	×	×	×		◎
		USER BOX WIDTH	240	◎	◎	×	×	×	×		◎
		USER BOX HEIGHT	135	◎	◎	×	×	×	×		◎
		USER BOX H POS	0	◎	◎	×	×	×	×		◎
		USER BOX V POS	0	◎	◎	×	×	×	×		◎
		CENTER H POS	0	◎	◎	×	×	×	×		◎
		CENTER V POS	0	◎	◎	×	×	×	×		◎
		ASPECT SAFE ZONE	OFF	◎	◎	×	×	×	×		◎
		ASPECT SAFE AREA	90%	◎	◎	×	×	×	×		◎
14	GAIN SW	GAIN LOW	0dB	◎	◎	×	×	×	×		◎
		GAIN MID	6dB	◎	◎	×	×	×	×		◎
		GAIN HIGH	12dB	◎	◎	×	×	×	×		◎
		GAIN TURBO	42dB	◎	◎	×	×	×	×		◎
		TURBO SW IND	OFF	◎	◎	×	×	×	×		◎
		SHOCKLESS GAIN	OFF	◎	◎	×	×	×	×		◎
15	VF SETTING	ZEBRA	OFF	×	◎	×	×	×	×	Depends on the VF switch setting	×
		ZEBRA SELECT	1	◎	◎	×	×	×	×		◎
		ZEBRA1 DET LVL	70%	◎	◎	×	×	×	×		◎
		ZEBRA1 APT LVL	10%	◎	◎	×	×	×	×		◎
		ZEBRA2 DET LVL	100%	◎	◎	×	×	×	×		◎
		VF DETAIL LEVEL	0	◎	○	×	×	×	×		◎
		VF ASPECT (SD)	AUTO	◎	◎	×	×	×	×		◎
16	AUTO IRIS	IRIS OVERRIDE	OFF	◎	◎	×	×	×	×		◎
		IRIS SPEED	0	◎	○	×	×	×	×		◎
		CLIP HIGH LIGHT	OFF	◎	◎	×	×	×	×		◎
		IRIS WINDOW	1	◎	◎	×	◎	×	○		◎
		IRIS WINDOW IND	OFF	×	△	×	△	×	○	Initial value	×
		IRIS VAR WIDTH	240	◎	◎	×	×	×	×		◎
		IRIS VAR HEIGHT	135	◎	◎	×	×	×	×		◎
		IRIS VAR H POS	0	◎	◎	×	×	×	×		◎
		IRIS VAR V POS	0	◎	◎	×	×	×	×		◎
17	SHOT ID	ID-1	Blank	◎	×	×	×	×	×		×
		ID-2	Blank	◎	×	×	×	×	×		×
		ID-3	Blank	◎	×	×	×	×	×		×
		ID-4	Blank	◎	×	×	×	×	×		×
18	SHOT DISP	SHOT DATE	OFF	◎	◎	×	×	×	×		◎
		SHOT TIME	OFF	◎	◎	×	×	×	×		◎
		SHOT MODEL NAME	OFF	◎	◎	×	×	×	×		◎
		SHOT SERIAL NO	OFF	◎	◎	×	×	×	×		◎
		SHOT ID SEL	OFF	◎	◎	×	×	×	×		◎
		SHOT 16:9 CHARA	OFF	◎	◎	×	×	×	×		◎
		SHOT BLINK CHARA	OFF	◎	◎	×	×	×	×		◎

OPERATION Menu (4/5)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
19	SET STATUS	STATUS ABNORMAL	ON	◎	◎	×	×	×	×		◎
		STATUS SYSTEM	ON	◎	◎	×	×	×	×		◎
		STATUS FUNCTION	ON	◎	◎	×	×	×	×		◎
		STATUS AUDIO	ON	◎	◎	×	×	×	×		◎
20	WHITE SETTING	WHITE SWITCH <B>	MEM	◎	◎	×	×	×	×		◎
		SHOCKLESS WHITE	1	◎	◎	×	×	×	×		◎
		ATW HOLD MEMORY	OFF	◎	◎	×	×	×	×		◎
		ATW SPEED	4	◎	◎	×	×	×	×		◎
		AWB FIXED AREA	OFF	◎	◎	×	×	×	×		◎
		FILTER WHT MEM	OFF	◎	◎	×	×	×	×		◎
21	OFFSET WHT	OFFSET WHITE <A>	OFF	◎	◎	×	×	×	×		◎
		WARM-COOL <A>	3200	◎	◎	×	×	×	×		◎
		WARM-COOL BAL <A>	0	◎	◎	×	×	×	×		◎
		OFFSET WHITE <B>	OFF	◎	◎	×	×	×	×		◎
		WARM-COOL <B>	3200	◎	◎	×	×	×	×		◎
		WARM-COOL BAL <B>	0	◎	◎	×	×	×	×		◎
22	SHT ENABLE	SHUTTER ECS	ON	◎	◎	×	×	×	×		◎
		SHUTTER SLS	OFF	◎	◎	×	×	×	×		◎
		SHUTTER 1/32	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/33	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/40	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/48	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/50	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/60	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/96	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/100	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/120	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/125	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/250	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/500	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/1000	ON	◎	◎	×	×	×	×		◎
		SHUTTER 1/2000	ON	◎	◎	×	×	×	×		◎
23	LENS FILE	LENS FILE SELECT	1	×	×	×	×	×	×		×
		F. ID	No Offset	–	–	–	–	–	–		–
		S.No	Depends on the Lens	–	–	–	–	–	–		–
		L. ID	Depends on the Lens	–	–	–	–	–	–		–
		L. MF	Depends on the Lens	–	–	–	–	–	–		–

OPERATION Menu (5/5)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
24	FORMAT	SYSTEM LINE	Default setting	×	×	×	×	×	×		×
		SYSTEM FREQUENCY	Default setting	×	×	×	×	×	×		×
		SCAN MODE	59.9P	×	×	×	×	×	×		×
		REC FORMAT	HD422 50	◎	◎	×	×	×	×		◎
		ASPECT RATIO(SD)	16:9	◎	◎	×	×	×	×		◎
		AU DATA LEN (IMX)	16bit	◎	◎	×	×	×	×		◎
		COUNTRY	Default setting	×	×	×	×	×	×		×
25	SOURCE SEL	FRONT MIC SELECT	STREO	◎	◎	×	×	×	×		◎
		REC VIDEO SOURCE	CAM	◎	◎	×	×	×	×		◎
		EXT VIDEO SOURCE	HDSDI	◎	◎	×	×	×	×		◎
		WIDE MODE(EXT)	AUTO	◎	◎	×	×	×	×		◎
		SETUP REMOVE	7.5%	◎	◎	×	×	×	×		◎
26	UMID SET	COUNTRY CODE	Blank	◎	×	×	×	×	×		×
		ORGANIZATION	Blank	◎	×	×	×	×	×		×
		USER CODE	Blank	◎	×	×	×	×	×		×
		TIME ZONE	00	◎	◎	×	×	×	×		◎
27	CLIP TITLE	TITLE	DSABL	◎	◎	×	×	×	×		◎
		SELECT PREFIX	EXEC	–	–	–	–	–	–		–
		CLEAR MUNERIC	EXEC	–	–	–	–	–	–		–
		LOAD PREFIX DATA	EXEC	–	–	–	–	–	–		–
		PREFIX	TITLE	◎	×	×	×	×	×		×
		NUMERIC	00001	×	×	×	×	×	×		×
28	FILE NAMING	NAMING FORM	C****	◎	◎	×	×	×	×		◎
		AUTO NAMING	C****	◎	◎	×	×	×	×		◎
29	SELECT FUNCTION*	LETTER BOX	DISABLE	◎	◎	×	×	×	×		◎
		FOCUS MAG	DISABLE	◎	◎	×	×	×	×		◎
30	MEMORY REC	MEMORY REC	DSABL	◎	◎	×	×	×	×		◎
		COPY CURRENT CLP	EXEC	–	–	–	–	–	–		–
		COPY ALL CLIPS	EXEC	–	–	–	–	–	–		–
		ABORT COPY	EXEC	–	–	–	–	–	–		–
		DEL ALL MEM CLP	EXEC	–	–	–	–	–	–		–
		FORMAT MEMORY	EXEC	–	–	–	–	–	–		–

* : This does not appear when SYSTEM LINE is set to 1080 and SYSTEM FREQUENCY is set to 23.9P.

2. PAINT Menu (1/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	SW STATUS	GAMMA	ON	◎	◎	◎	△	×	○		◎
		BLACK GAMMA	OFF	◎	◎	◎	◎	×	○		◎
		MATRIX	OFF	◎	◎	◎	◎	×	○		◎
		KNEE	ON	◎	◎	◎	◎	×	○		◎
		WHITE CLIP	ON	◎	△	◎	△	×	○	ON	◎
		DETAIL	ON	◎	◎	◎	△	×	○		◎
		APERTURE	ON	◎	◎	◎	△	×	○		◎
		FLARE	ON	◎	◎	◎	△	×	○		◎
		TEST SAW	OFF	◎	◎	×	△	×	○		◎
02	WHITE	COLOR TEMP <A>	3200	◎	○	◎	○	×	○		×
		C TEMP BAL <A>	0	◎	○	◎	○	×	○		×
		R GAIN <A>	0	◎	○	◎	○	×	○		×
		B GAIN <A>	0	◎	○	◎	○	×	○		×
		COLOR TEMP <B>	3200	◎	○	◎	○	×	○		×
		C TEMP BAL <B>	0	◎	○	◎	○	×	○		×
		R GAIN <B>	0	◎	○	◎	○	×	○		×
		B GAIN <B>	0	◎	○	◎	○	×	○		×
03	BLACK/FLARE	MASTER BLACK	0	◎	○	◎	○	×	○		◎
		R BLACK	0	◎	○	◎	△	×	○		◎
		B BLACK	0	◎	○	◎	△	×	○		◎
		MASTER FLARE	0	◎	○	◎	○	×	○		◎
		R FLARE	0	◎	○	◎	○	●	○		▲
		G FLARE	0	◎	○	◎	○	●	○		▲
		B FLARE	0	◎	○	◎	○	●	○		▲
		FLARE	ON	◎	◎	◎	△	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
04	GAMMA	GAMMA	ON	◎	◎	◎	△	×	○		◎
		STEP GAMMA	0.45	◎	◎	◎	◎	×	○		◎
		MASTER GAMMA	0	◎	○	◎	○	×	○		◎
		R GAMMA	0	◎	○	◎	○	×	○		◎
		G GAMMA	0	◎	○	◎	○	×	○		◎
		B GAMMA	0	◎	○	◎	○	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		GAMMA TABLE	STD	◎	◎	◎	◎	×	○		◎
		GAM TABLE (STD)	5	◎	◎	◎	◎	×	○		◎
		GAM TABLE (HG)	4	◎	◎	◎	◎	×	○		◎

PAINT Menu (2/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
05	BLACK GAMMA	BLACK GAMMA	OFF	◎	◎	◎	◎	×	○		◎
		BLACK GAM RANGE	HIGH	◎	◎	◎	◎	×	○		◎
		MASTER BLK GAMMA	0	◎	○	◎	○	×	○		◎
		R BLACK GAMMA	0	◎	○	◎	○	×	○		◎
		G BLACK GAMMA	0	◎	○	◎	○	×	○		◎
		B BLACK GAMMA	0	◎	○	◎	○	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
06	KNEE	KNEE	ON	◎	◎	◎	◎	×	○		◎
		KNEE POINT	95.0	◎	◎	◎	◎	×	○		◎
		KNEE SLOPE	0	◎	○	◎	○	×	○		◎
		KNEE SATURATION	ON	◎	◎	◎	◎	×	○		◎
		KNEE SAT LEVEL	0	◎	○	◎	○	×	○		◎
		WHITE CLIP	ON	◎	△	◎	△	×	○	Initial value	◎
		WHITE CLIP LEVEL	108.0*	◎	◎	◎	◎	×	○		◎
07	DETAIL 1	DETAIL	ON	◎	◎	◎	△	×	○		◎
		APERTURE	ON	◎	◎	◎	△	×	○		◎
		DETAIL LEVEL	0	◎	○	◎	○	×	○		◎
		APERTURE LEVEL	0	◎	○	◎	○	×	○		◎
		DTL H/V RATIO	0	◎	○	◎	○	×	○		◎
		CRISPENING	0	◎	○	◎	○	×	○		◎
		LEVEL DEPEND	ON	◎	◎	◎	◎	×	○		◎
		LEVEL DEPEND LVL	0	◎	○	◎	○	×	○		◎
		DETAIL FREQUENCY	0	◎	○	◎	○	×	○		◎
08	DETAIL 2	KNEE APERTURE	OFF	◎	◎	◎	◎	×	○		◎
		KNEE APT LVL	0	◎	○	◎	○	×	○		◎
		DETAIL LIMIT	0	◎	○	◎	○	×	○		◎
		DTL WHT LIMIT	0	◎	○	◎	○	×	○		◎
		DTL BLK LIMIT	0	◎	○	◎	○	×	○		◎
		DTL V-BLK LMT	0	◎	○	◎	○	×	○		◎
		V DTL CREATION	R+G	◎	◎	◎	◎	×	○		◎
		H/V CONTROL MODE	V	◎	◎	◎	◎	×	○		◎
09	SD DETAIL	SD DETAIL	OFF	◎	◎	◎	◎	×	○		◎
		SD DETAIL LEVEL	0	◎	○	◎	○	×	○		◎
		SD CRISPENING	0	◎	○	◎	○	×	○		◎
		SD DTL WHT LIMIT	0	◎	○	◎	○	×	○		◎
		SD DTL BLK LIMIT	0	◎	○	◎	○	×	○		◎
		SD LEVEL DEPEND	ON	◎	◎	◎	◎	×	○		◎
		SD LV DEPEND LVL	0	◎	○	◎	○	×	○		◎
		SD DTL FREQUENCY	0	◎	○	◎	○	×	○		◎
		SD DTL H/V RATIO	0	◎	○	◎	○	×	○		◎
		SD CROSS COLOR	0	◎	○	◎	○	×	○		◎

* : Initial value is 105.0 when COUNTRY is set to “PAL AREA”.

PAINT Menu (3/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
10	SKIN DETAIL	SKIN DETAIL ALL	OFF	◎	◎	◎	◎	×	○		◎
		SKIN DETECT	EXEC	–	–	–	–	–	–		–
		SKIN AREA IND	OFF	×	△	×	△	×	○	Initial value	×
		SKIN DTL SELECT	1	×	△	×	△	×	○	Initial value	×
		SKIN DETAIL	ON	◎	◎	◎	◎	×	○		◎
		SKIN DETAIL LVL	0	◎	○	◎	○	×	○		◎
		SKIN DTL SAT	0	◎	○	◎	○	×	○		◎
		SKIN DTL HUE	0	◎	◎	◎	◎	×	○		◎
		SKIN DTL WIDTH	39	◎	◎	◎	◎	×	○		◎
11	MTX LINEAR	MATRIX	OFF	◎	◎	◎	◎	×	○		◎
		MATRIX (USER)	OFF	◎	◎	◎	◎	×	○		◎
		MATRIX (PRESET)	OFF	◎	◎	◎	◎	×	○		◎
		MATRIX (PRST) SEL	2	◎	◎	◎	◎	×	○		◎
		MATRIX (USER) R-G	0	◎	○	◎	○	×	○		◎
		MATRIX (USER) R-B	0	◎	○	◎	○	×	○		◎
		MATRIX (USER) G-R	0	◎	○	◎	○	×	○		◎
		MATRIX (USER) G-B	0	◎	○	◎	○	×	○		◎
		MATRIX (USER) B-R	0	◎	○	◎	○	×	○		◎
		MATRIX (USER) B-G	0	◎	○	◎	○	×	○		◎
12	MTX MULTI	MATRIX	OFF	◎	◎	◎	◎	×	○		◎
		MATRIX (MULTI)	OFF	◎	◎	◎	◎	×	○		◎
		MATRIX AREA IND	OFF	×	△	×	△	×	○	Initial value	×
		MATRIX COLOR DET	EXEC	–	–	–	–	–	–		–
		MTX (MULTI) PRESET	EXEC	–	–	–	–	–	–		–
		MTX (MULTI) AXIS	B	×	△	×	△	×	○	Initial value	×
		MTX (MULTI) HUE	0	◎	○	◎	○	×	○		◎
		MTX (MULTI) SAT	0	◎	○	◎	○	×	○		◎
13	V MODULATION	VMOD	ON	◎	◎	×	△	×	○		◎
		MASTER VMOD	0	◎	○	◎	△	●	○		◎
		R VMOD	0	◎	○	◎	△	●	○		◎
		G VMOD	0	◎	○	◎	△	●	○		◎
		B VMOD	0	◎	○	◎	△	●	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
14	SATURATION	LOW KEY SAT	OFF	◎	◎	◎	◎	×	○		◎
		L KEY SAT LEVEL	0	◎	○	◎	○	×	○		◎
		L KEY SAT RANGE	HIGH	◎	◎	◎	◎	×	○		◎
		Y BLACK GAMMA	OFF	◎	◎	◎	◎	×	○		◎
		Y BLK GAM LEVEL	0	◎	○	◎	○	×	○		◎
		Y BLK GAM RANGE	HIGH	◎	◎	◎	◎	×	○		◎
15	NOISE SUPPRESS	NOISE SUPPRESS	ON	◎	◎	◎	◎	×	○		◎

PAINT Menu (4/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
16	SCENE FILE	☐ 1	STANDARD	–	–	–	–	–	–		–
		☐ 2	STANDARD	–	–	–	–	–	–		–
		☐ 3	STANDARD	–	–	–	–	–	–		–
		☐ 4	STANDARD	–	–	–	–	–	–		–
		☐ 5	STANDARD	–	–	–	–	–	–		–
		☐ STANDARD	–	–	–	–	–	–	–		–
		SCENE RECALL	EXEC	–	–	–	–	–	–		–
		SCENE STORE	EXEC	–	–	–	–	–	–		–
		F.ID	Blank	×	×	◎	×	×	×		×

3. MAINTENANCE Menu (1/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	WHITE SHADING	WHT SHAD CH SEL	R	◎	◎	×	△	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		R/G/B WHT H SAW	0	×	○	×	×	×	×		×
		R/G/B WHT H PARA	0	×	○	×	×	×	×		×
		R/G/B WHT V SAW	0	×	○	×	×	×	×		×
		R/G/B WHT V PARA	0	×	○	×	×	×	×		×
		WHITE SAW/PARA	ON	×	△	×	△	×	○	ON	×
02	BLACK SHADING	BLK SHAD CH SEL	R	◎	◎	×	△	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○		◎
		R/G/B BLK H SAW	0	×	○	×	×	×	×		×
		R/G/B BLK H PARA	0	×	○	×	×	×	×		×
		R/G/B BLK V SAW	0	×	○	×	×	×	×		×
		R/G/B BLK V PARA	0	×	○	×	×	×	×		×
		BLACK SAW/PARA	ON	×	△	×	△	×	○	ON	×
		MASTER BLACK	0	◎	○	◎	○	×	○		◎
		MASTER GAIN(TMP)	Depends on the switch setting.	×	◎	◎	◎	×	○	Depends on the GAIN switch setting.	×
03	LEVEL ADJUST	VBS VIDEO LEVEL	0	×	○	×	×	×	×		◎
		HD-Y LEVEL	0	×	○	×	×	×	×		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
04	BATTERY 1	Info BEFORE END	5 %	◎	◎	×	×	×	×		◎
		Info END	0 %	◎	◎	×	×	×	×		◎
		Sony BEFORE END	11.5V	◎	◎	×	×	×	×		◎
		Sony END	11.0V	◎	◎	×	×	×	×		◎
		Other BEFORE END	11.8V	◎	◎	×	×	×	×		◎
		Other END	11.0V	◎	◎	×	×	×	×		◎
		DC IN BEFORE END	11.8V	◎	◎	×	×	×	×		◎
		DC IN END	11.0V	◎	◎	×	×	×	×		◎
		DETECTED BATTERY		–	–	–	–	–	–		–
05	BATTERY 2	TYPE DETECTION	AUTO	◎	◎	×	×	×	×		◎
		SEGMENT No.7	17.0V	◎	◎	×	×	×	×		◎
		SEGMENT No.6	16.0V	◎	◎	×	×	×	×		◎
		SEGMENT No.5	15.0V	◎	◎	×	×	×	×		◎
		SEGMENT No.4	14.0V	◎	◎	×	×	×	×		◎
		SEGMENT No.3	13.0V	◎	◎	×	×	×	×		◎
		SEGMENT No.2	12.0V	◎	◎	×	×	×	×		◎
		SEGMENT No.1	11.0V	◎	◎	×	×	×	×		◎

MAINTENANCE Menu (2/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
06	AUDIO-1	FRONT MIC SELECT	STREO	◎	◎	×	×	×	×		◎
		AUDIO CH3/4 MODE	SW	◎	◎	×	×	×	×		◎
		REAR XLR AUTO	OFF	◎	◎	×	×	×	×		◎
		FRONT MIC REF	–50dB	◎	◎	×	×	×	×		◎
		REAR MIC REF	–60dB	◎	◎	×	×	×	×		◎
		MIN ALARM VOL	OFF	◎	◎	×	×	×	×		◎
		SP ATT LEVEL	OFF	◎	◎	×	×	×	×		◎
		HEADPHONE OUT	MONO	◎	◎	×	×	×	×		◎
07	AUDIO- 2	AU DATA LEN (IMX)	16bit	◎	◎	×	×	×	×		◎
		AU REF LEVEL	–20dB	◎	◎	×	×	×	×		◎
		AU REF OUT	0dB	◎	◎	×	×	×	×		◎
		AU CH12 AGC MODE	MONO	◎	◎	×	×	×	×		◎
		AU CH34 AGC MODE	MONO	◎	◎	×	×	×	×		◎
		AU AGC SPEC	–6dB	◎	◎	×	×	×	×		◎
		AU LIMITER MODE	OFF	◎	◎	×	×	×	×		◎
		AU OUT LIMITER	ON	◎	◎	×	×	×	×		◎
08	AUDIO-3	AU SG (1KHz)	OFF	◎	◎	×	×	×	×		◎
		MIC CH1 LEVEL	FRONT	◎	◎	×	×	×	×		◎
		MIC CH2 LEVEL	FRONT	◎	◎	×	×	×	×		◎
		REAR1/WRR LEVEL	SIDE1	◎	◎	×	×	×	×		◎
		REAR2/WRR LEVEL	SIDE2		◎	×	×	×	×		◎
		AUDIO CH3 LEVEL	FIX	◎	◎	×	×	×	×		◎
		AUDIO CH4 LEVEL	FIX	◎	◎	×	×	×	×		◎
09	WRR SETTING	WRR VALID CH SEL	ALL	◎	◎	×	×	×	×		◎
		WRR CH SELECT	TX1	×	△	×	×	×	×	Initial value	×
		WRR DELAY COMP	ON	◎	◎	×	×	×	×		◎
		TX1/2/3/4		–	–	–	–	–	–		–
		TX1/2/3/4 AUDIO PEAK		–	–	–	–	–	–		–
		TX1/2/3/4 INPUT LEVEL		–	–	–	–	–	–		–
		TX1/2/3/4 ATT LEVEL	0dB	–	–	–	–	–	–		–
		TX1/2/3/4 LCF FREQ	200Hz	–	–	–	–	–	–		–
		TX1/2/3/4 SYSTEM DELAY	AUTO	◎	△	×	×	×	×	Initial value	◎
10	TIMECODE	TC OUT	AUTO	◎	◎	×	×	×	×		◎
		DF/NDF	DF	◎	◎	×	×	×	×		◎
		EXT-LK DF/NDF	INT	◎	◎	×	×	×	×		◎
		EXT-LK UBIT	INT	◎	◎	×	×	×	×		◎
		LTC UBIT	FIX	◎	◎	×	×	×	×		◎
		VITC UBIT(SD)	FIX	◎	◎	×	×	×	×		◎
		WATCH AUTO ADJ	ON	◎	◎	×	×	×	×		◎
		UBIT GROUP ID	000	◎	◎	×	×	×	×		◎
		VITC INS LINE 1	16H*1	◎	◎	×	×	×	×		◎
		VITC INS LINE 2	18H*2	◎	◎	×	×	×	×		◎

*1 : Initial value is 19H when COUNTRY is set to PAL AREA.
*2 : Initial value is 21H when COUNTRY is set to PAL AREA.

MAINTENANCE Menu (3/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
11	ESSENCE MARK	RET SHOT MARK 1	ON	◎	◎	×	×	×	×		◎
		RET SHOT MARK 2	ON	◎	◎	×	×	×	×		◎
		INDEX PIC POS	0SEC	◎	◎	×	×	×	×		◎
		FIND MODE	R.ST	◎	◎	×	×	×	×		◎
12	CAM CONFIG 1	REC TALLY BLINK	ON	◎	◎	×	×	×	×		◎
		REC START BEEP	OFF	◎	◎	×	×	×	×		◎
		SUB LCD MODE SEL	TIMER	◎	◎	×	×	×	×		◎
		SUB LCD TIMER	1H	◎	◎	×	×	×	×		◎
		HDSDI REMOTE I/F	OFF	◎	◎	×	×	×	×		◎
		PROAV DISPLAY	DSABL	◎	◎	×	×	×	×		◎
		MIXED RECORDING	DSABL	◎	◎	×	×	×	×		◎
		SINGLE CLIP MODE	OFF	◎	◎	×	×	×	×		◎
		PB POSITION	KEEP	◎	◎	×	×	×	×		◎
13	CAM CONFIG 2	TEST SAW SELECT	SAW	◎	◎	×	×	×	×		◎
		COLOR BAR SELECT	ARIB	◎	◎	×	×	×	×		◎
		USER & ALL ONLY	OFF	◎	◎	×	×	×	×		◎
		RM COMMON MEMORY	OFF	◎	◎	×	×	×	×		◎
		RM REC START	RM	◎	◎	×	×	×	×		◎
		SHT DISP MODE	SEC	◎	◎	×	×	×	×		◎
		AF MARKER SOURCE	ASPEC	◎	◎	×	×	×	×		◎
		RM F NO DISPLAY	CTRL	◎	◎	×	×	×	×		◎
		FAN CONTROL	AUTO	◎	◎	×	×	×	×		◎
		FOCUS MAG SW	MTRY	◎	◎	×	×	×	×		◎
14	CAM CONFIG 3	ALAC	AUTO	◎	◎	×	×	×	×		◎
15	PRESET WHT	COLOR TEMP <P>	3200	◎	◎	×	○	×	○		◎
		C TEMP BAL <P>	0	◎	○	×	○	×	○		◎
		R GAIN <P>	0	◎	○	×	○	×	○		◎
		B GAIN <P>	0	◎	○	×	○	×	○		◎
		AWB ENABLE <P>	OFF	×	△	×	×	×	×	Initial value	×
16	WHITE FILTER	ND FILTER CTEMP	OFF	◎	◎	×	×	×	×		◎
		ND FLT CTEMP <1>	3200K	◎	◎	×	×	×	×		◎
		ND FLT CTEMP 2-4	5600K	◎	◎	×	×	×	×		◎
		ELECTRICAL CC<A>	3200K	◎	◎	×	×	×	×		◎
		ELECTRICAL CC<B>	4300K	◎	◎	×	×	×	×		◎
		ELECTRICAL CC<C>	5600K	◎	◎	×	×	×	×		◎
		ELECTRICAL CC<D>	6300K	◎	◎	×	×	×	×		◎
17	DCC ADJUST	DCC FUNCTION SEL	DCC	◎	◎	○	◎	×	○		◎
		DCC D RANGE	600%	◎	◎	○	◎	×	○		◎
		DCC POINT	0	◎	○	○	◎	×	○		◎
		DCC GAIN	0	◎	○	○	◎	×	○		◎
		DCC DELAY TIME	0	◎	○	○	◎	×	○		◎
		DCC PEAK FILTER	0	◎	○	○	○	×	○		◎

MAINTENANCE Menu (4/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
18	AUTO IRIS 2	IRIS WINDOW	1	◎	◎	×	◎	×	○		◎
		IRIS WINDOW IND	OFF	×	△	×	△	×	○	Initial value	×
		IRIS LEVEL	0	◎	○	◎	○	×	○		◎
		IRIS APL RATIO	0	◎	○	◎	○	×	○		◎
		IRIS VAR WIDTH	240	◎	◎	×	×	×	×		◎
		IRIS VAR HEIGHT	135	◎	◎	×	×	×	×		◎
		IRIS VAR H POS	0	◎	◎	×	×	×	×		◎
		IRIS VAR V POS	0	◎	◎	×	×	×	×		◎
		IRIS SPEED	0	◎	○	×	×	×	×		◎
		CLIP HIGH LIGHT	OFF	◎	◎	×	×	×	×		◎
19	GENLOCK	GENLOCK	ON	◎	◎	×	×	×	×		◎
		GL HD PHASE	0	×	○	×	×	×	×		◎
		GL SD PHASE*1	0	×	○	×	×	×	×		◎
		REFERENCE	INTERNAL	–	–	–	–	–	–		–
20	ND COMP	ND OFFSET ADJUST	OFF	×	△	×	×	×	×	Initial value	×
		CLEAR ND OFFSET	EXEC	–	–	–	–	–	–		–
21	AUTO SHADING	AUTO BLK SHADING	EXEC	–	–	–	–	–	–		–
		RESET BLK SHD	EXEC	–	–	–	–	–	–		–
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		MASTER GAIN(TMP)	Depends on the switch setting.	×	◎	◎	◎	×	○	Depends on the GAIN switch setting.	×
22	APR	APR	EXEC	–	–	–	–	–	–		–
		APR(SLS)	EXEC	–	–	–	–	–	–		–
		APR PRESET	EXEC	–	–	–	–	–	–		–
23	NETWORK	DHCP*2	DSABL	◎	×	×	×	×	×		×
		IP ADDRESS*2	192.168.1.10	◎	×	×	×	×	×		×
		SUBNET MASK*2	255.255.255.0	◎	×	×	×	×	×		×
		DEF.GATEWAY*2	0.0.0.0	◎	×	×	×	×	×		×
		LINK SPEED*2	AUTO	◎	×	×	×	×	×		×
		DUPLEX*2	AUTO	◎	×	×	×	×	×		×
		DNS1*2	0.0.0.0	◎	×	×	×	×	×		×
		DNS2*2	0.0.0.0	◎	×	×	×	×	×		×
		UPnP*2	DSABL	◎	×	×	×	×	×		×
		NET CFG RESET	EXEC	–	–	–	–	–	–		–
24	UP CONVERTER	UP CON PROCESS	ADPT	◎	○	×	×	×	×		◎
		UC DETAIL LEVEL	0	◎	○	×	×	×	×		◎
		UC CRISPENING	0	◎	○	×	×	×	×		◎
		UC DETAIL LIMIT	0	◎	○	×	×	×	×		◎
		UC LV DEPEND LVL	0	◎	○	×	×	×	×		◎
		UC DTL FREQUENCY	5.0M	◎	◎	×	×	×	×		◎
		UC DTL H/V RATIO	0	◎	○	×	×	×	×		◎

*1 : This does not appear when SYSTEM LINE is set to 1080 and SYSTEM FREQUENCY is set to 23.9P.
*2 : These items can be loaded when NETWORK DATA is set to ON on the ALL FILE page.

4. FILE Menu (1/2)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	USER FILE	USER FILE LOAD	EXEC	–	–	–	–	–	–		–
		USER FILE SAVE	EXEC	–	–	–	–	–	–		–
		F.ID	Blank	×	×	×	×	×	×		×
		USER PRESET	EXEC	–	–	–	–	–	–		–
02	USER FILE 2	STORE USR PRESET	EXEC	–	–	–	–	–	–		–
		CLEAR USR PRESET	EXEC	–	–	–	–	–	–		–
		CUSTOMIZE RESET	EXEC	–	–	–	–	–	–		–
		LOAD CUSTOM DATA	OFF	◎	◎	×	×	×	×		◎
		LOAD OUT OF USER	OFF	◎	◎	×	×	×	×		◎
		BEFORE FILE PAGE	OFF	◎	◎	×	×	×	×		◎
		USER LOAD WHITE	OFF	◎	◎	×	×	×	×		◎
03	ALL FILE	ALL FILE LOAD	EXEC	–	–	–	–	–	–		–
		ALL FILE SAVE	EXEC	–	–	–	–	–	–		–
		F.ID	Blank	◎	×	×	×	×	×		×
		ALL PRESET	EXEC	–	–	–	–	–	–		–
		STORE ALL PRESET	EXEC	–	–	–	–	–	–		–
		CLEAR ALL PRESET	EXEC	–	–	–	–	–	–		–
		3SEC CLR PRESET	OFF	×	△	×	×	×	×	Initial value	×
		NETWORK DATA	OFF	×	◎	×	×	×	×		×
04	SCENE FILE	☐ 1	STANDARD	–	–	–	–	–	–		–
		☐ 2	STANDARD	–	–	–	–	–	–		–
		☐ 3	STANDARD	–	–	–	–	–	–		–
		☐ 4	STANDARD	–	–	–	–	–	–		–
		☐ 5	STANDARD	–	–	–	–	–	–		–
		☐ STANDARD	–	–	–	–	–	–	–		–
		SCENE RECALL	EXEC	–	–	–	–	–	–		–
		SCENE STORE	EXEC	–	–	–	–	–	–		–
		F.ID	Blank	×	×	◎	×	×	×		×
05	REFERENCE	REFERENCE STORE	EXEC	–	–	–	–	–	–		–
		REFERENCE CLEAR	EXEC	–	–	–	–	–	–		–
		REFERENCE LOAD	EXEC	–	–	–	–	–	–		–
		REFERENCE SAVE	EXEC	–	–	–	–	–	–		–
		F.ID	Blank	×	×	×	◎	×	×		×
		SCENE WHITE DATA	OFF	◎	◎	×	×	×	×		◎

FILE Menu (2/2)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
06	LENS FILE 1	LENS FILE RECALL	EXEC	–	–	–	–	–	–		–
		LENS FILE STORE	EXEC	–	–	–	–	–	–		–
		F.ID	No Offset	–	–	–	–	–	–		–
		SOURCE	MEMORY 1	–	–	–	–	–	–		–
		LENS NO OFFSET	EXEC	–	–	–	–	–	–		–
		LENS AUTO RECALL	OFF	◎	◎	×	×	×	×		◎
		S.No	Depends on the Lens	–	–	–	–	–	–		–
		L.ID	Depends on the Lens	–	–	–	–	–	–		–
		L.MF	Depends on the Lens	–	–	–	–	–	–		–
07	LENS FILE 2	LENS M VMOD	0	×	×	×	×	◎	×		×
		LENS CENTER H	0	×	×	×	×	◎	×		×
		LENS CENTER V	0	×	×	×	×	◎	×		×
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		LENS R FLARE	0	×	×	×	×	◎	×		×
		LENS G FLARE	0	×	×	×	×	◎	×		×
		LENS B FLARE	0	×	×	×	×	◎	×		×
		LENS W-R OFST	0	×	×	×	×	◎	×		×
		LENS W-B OFST	0	×	×	×	×	◎	×		×
08	LENS FILE 3	SHADING CH SEL	R	◎	◎	×	×	×	×		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		LENS R/G/B H SAW	0	×	×	×	×	◎	×		×
		LENS R/G/B H PARA	0	×	×	×	×	◎	×		×
		LENS R/G/B V SAW	0	×	×	×	×	◎	×		×
		LENS R/G/B V PARA	0	×	×	×	×	◎	×		×
09	MEMORY STICK	M.S.FORMAT	EXEC	–	–	–	–	–	–		–
		M.S.IN > JUMP TO	OFF	◎	◎	×	×	×	×		◎

5. DIAGNOSIS Menu (1/2)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	HOURS METER	OPERATION	000000H	–	–	–	–	–	–		–
		LASER	000000	–	–	–	–	–	–		–
		OPERATION (rst)	000000H	–	–	–	–	–	–		–
		SPINDLE (rst)	000000H	–	–	–	–	–	–		–
		LOADING (rst)	000000	–	–	–	–	–	–		–
		SEEK (rst)	000000H	–	–	–	–	–	–		–
02	TIME/DATE	ADJUST	EXEC	–	–	–	–	–	–		–
		HOUR	Internal clock	–	–	–	–	–	–		–
		MIN	Internal clock	–	–	–	–	–	–		–
		SEC	Internal clock	–	–	–	–	–	–		–
		YEAR	Internal clock	–	–	–	–	–	–		–
		MONTH	Internal clock	–	–	–	–	–	–		–
		DAY	Internal clock	–	–	–	–	–	–		–
03	ROM VERSION 1	PACKAGE	ROM Version	–	–	–	–	–	–		–
		SY1	ROM Version	–	–	–	–	–	–		–
		SY2K	ROM Version	–	–	–	–	–	–		–
		SY2U	ROM Version	–	–	–	–	–	–		–
		DRV	ROM Version	–	–	–	–	–	–		–
		AT	ROM Version	–	–	–	–	–	–		–
		FP	ROM Version	–	–	–	–	–	–		–
04	ROM VERSION 2	LVIS	ROM Version	–	–	–	–	–	–		–
		TSYS	ROM Version	–	–	–	–	–	–		–
		TMBP	ROM Version	–	–	–	–	–	–		–
		FAM	ROM Version	–	–	–	–	–	–		–
		LABY	ROM Version	–	–	–	–	–	–		–
		BRDG	ROM Version	–	–	–	–	–	–		–
		PIER	ROM Version	–	–	–	–	–	–		–
		CAVA	ROM Version	–	–	–	–	–	–		–
05	ROM VERSION 3	DSP0	ROM Version	–	–	–	–	–	–		–
		DSP2	ROM Version	–	–	–	–	–	–		–
		PRXA	ROM Version	–	–	–	–	–	–		–

DIAGNOSIS Menu (2/2)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
06	DEV STATUS	I/O	–	–	–	–	–	–	–		–
		MS	OK	–	–	–	–	–	–		–
		FP	OK	–	–	–	–	–	–		–
		CN	OK	–	–	–	–	–	–		–
		DCP	OK	–	–	–	–	–	–		–
		VF	OK	–	–	–	–	–	–		–
		EEPROM	–	–	–	–	–	–	–		–
		CN	OK	–	–	–	–	–	–		–
		DCP	OK	–	–	–	–	–	–		–
		DR	OK	–	–	–	–	–	–		–
		LSI		–	–	–	–	–	–		–
		DCP1	OK	–	–	–	–	–	–		–
		DCP2	OK	–	–	–	–	–	–		–
		DCP3	OK	–	–	–	–	–	–		–
		DCP4	OK	–	–	–	–	–	–		–
		TG	OK	–	–	–	–	–	–		–
		D/A		–	–	–	–	–	–		–
		DCP1	OK	–	–	–	–	–	–		–
		DCP2	OK	–	–	–	–	–	–		–
		DCP3	OK	–	–	–	–	–	–		–
		FRAM		–	–	–	–	–	–		–
		AT	OK	–	–	–	–	–	–		–
		FAN		–	–	–	–	–	–		–
		MB	OK	–	–	–	–	–	–		–
		SCI		–	–	–	–	–	–		–
		SY	OK	–	–	–	–	–	–		–
		RM	--	–	–	–	–	–	–		–
07	OPTION BOARD	HD/SD-SDI INPUT	–	–	–	–	–	–	–		–
		COMPOSITE INPUT	–	–	–	–	–	–	–		–
		SD REC & PB	–	–	–	–	–	–	–		–
		24P REC & PB	–	–	–	–	–	–	–		–

6. SERVICE Menu (1/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
01	MENU SET	RE ROTATION REV	OFF	×	▲	×	×	×	×		◎
		RE SPEED	2	×	▲	×	×	×	×		◎
		DIRECT VALUE	OFF	×	▲	×	×	×	×	Initial value	◎
		SERVICE RESET	EXEC	–	–	–	–	–	–		–
		FACTORY PRESET	EXEC	–	–	–	–	–	–		–
02	SP FUNC	GAIN DISP MODE	dB	×	▲	×	×	×	×		◎
		KNEE 2ND POINT	ON	×	▲	×	×	×	×		◎
03	WHITE SHADING	WHT SHAD CH SEL	R	◎	◎	×	△	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		R/G/B WHT H SAW	0	×	▲	×	×	×	×		◎
		R/G/B WHT H PARA	0	×	▲	×	×	×	×		◎
		R/G/B WHT V SAW	0	×	▲	×	×	×	×		◎
		R/G/B WHT V PARA	0	×	▲	×	×	×	×		◎
		WHITE SAW/PARA	ON	×	△	×	△	×	○	ON	×
04	BLACK SHADING	BLK SHAD CH SEL	R	◎	◎	×	△	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		R/G/B BLK H SAW	0	×	▲	×	×	×	×		◎
		R/G/B BLK H PARA	0	×	▲	×	×	×	×		◎
		R/G/B BLK V SAW	0	×	▲	×	×	×	×		◎
		R/G/B BLK V PARA	0	×	▲	×	×	×	×		◎
		BLACK SAW/PARA	ON	×	△	×	△	×	○	ON	×
		MASTER BLACK	0	◎	○	◎	○	×	○		◎
		MASTER GAIN(TMP)	Depends on the switch setting.	×	◎	◎	◎	×	○	Depends on the GAIN switch setting.	×
05	SHADING	AUTO WHT SHADING	EXEC	–	–	–	–	–	–		–
		RESET WHT SHD	EXEC	–	–	–	–	–	–		–
		AUTO BLK SHADING	EXEC	–	–	–	–	–	–		–
		RESET BLK SHD	EXEC	–	–	–	–	–	–		–
		2D BLACK SHADING	OFF	×	▲	×	×	×	×		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		MASTER GAIN(TMP)	Depends on the switch setting.	×	◎	◎	◎	×	○	Depends on the GAIN switch setting.	×

SERVICE Menu (2/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
06	VCO ADJUST	TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		CLK OUT SELECT	OFF	×	▲	×	×	×	×	Initial value	×
		HDCK (NTSC AREA)	0	×	▲	×	×	×	×		◎
		HDCK (PAL AREA)	0	×	▲	×	×	×	×		◎
		SDCK	0	×	▲	×	×	×	×		◎
07	CCD ADJUST 1	R CCD GAIN	0	×	▲	×	×	×	×		◎
		G CCD GAIN	0	×	▲	×	×	×	×		◎
		B CCD GAIN	0	×	▲	×	×	×	×		◎
		R TEST SAW GAIN	0	×	▲	×	×	×	×		◎
		G TEST SAW GAIN	0	×	▲	×	×	×	×		◎
		B TEST SAW GAIN	0	×	▲	×	×	×	×		◎
		TEST SAW	OFF	◎	◎	×	△	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
08	CCD ADJUST 2	R VSUB	Factory adjustment value	×	▲	×	×	×	×		◎
		G VSUB	Factory adjustment value	×	▲	×	×	×	×		◎
		B VSUB	Factory adjustment value	×	▲	×	×	×	×		◎
		R VSUB OFST(P)	Factory adjustment value	×	▲	×	×	×	×		◎
		G VSUB OFST(P)	Factory adjustment value	×	▲	×	×	×	×		◎
		B VSUB OFST(P)	Factory adjustment value	×	▲	×	×	×	×		◎
		CCD H DRIVER	Factory adjustment value	×	▲	×	×	×	×		◎
		AD CLOCK PHASE	Factory adjustment value	×	▲	×	×	×	×		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
09	REGI ADJUST	R CCD REGI	Factory adjustment value	×	▲	×	×	×	×		◎
		B CCD REGI	Factory adjustment value	×	▲	×	×	×	×		◎
		R DCP REGI	Factory adjustment value	×	▲	×	×	×	×		◎
		B DCP REGI	Factory adjustment value	×	▲	×	×	×	×		◎
		DCP REGI PULSE	OFF	×	▲	×	×	×	×	Initial value	×
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎

SERVICE Menu (3/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
10	FBC ADJUST	FBC ADJUST MODE	OFF	×	▲	×	×	×	×	Initial value	×
		R FBC OFFSET	0	×	▲	×	×	×	×		◎
		G FBC OFFSET	0	×	▲	×	×	×	×		◎
		B FBC OFFSET	0	×	▲	×	×	×	×		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	×	Y when R/G/B	◎
11	LCD ADJUST	LCD VCO ADJUST	EXEC	–	–	–	–	–	–		–
		LCD COM DC	0	×	▲	×	×	×	×		◎
		LCD BLACK LIMIT	0	×	▲	×	×	×	×		◎
		LCD PS BRIGHT	0	×	▲	×	×	×	×		◎
		LCD BRIGHT	0	×	▲	×	×	×	×		◎
		LCD BRIGHT R	0	×	▲	×	×	×	×		◎
		LCD BRIGHT B	0	×	▲	×	×	×	×		◎
		LCD CONTRAST	0	×	▲	×	×	×	×		◎
12	FLARE	R FLARE	0	×	▲	×	×	×	×		◎
		G FLARE	0	×	▲	×	×	×	×		◎
		B FLARE	0	×	▲	×	×	×	×		◎
		FLARE	ON	◎	◎	◎	△	×	○		◎
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
13	GAMMA/DETAIL	R GAMMA	0	×	▲	×	×	×	×		◎
		G GAMMA	0	×	▲	×	×	×	×		◎
		B GAMMA	0	×	▲	×	×	×	×		◎
		DETAIL LEVEL	0	×	▲	×	×	×	×		◎
14	MANUAL RPN	TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		RPN CURSOR	OFF	×	▲	×	×	×	×	Initial value	×
		SUPER(MENU)	ON	◎	◎	×	×	×	×		◎
		RPN WIDTH	1	×	▲	×	×	×	×		×
		CURSOR H POS	960	×	▲	×	×	×	×		×
		CURSOR V POS	540	×	▲	×	×	×	×		×
		CURSOR JUMP	CURR	×	▲	×	×	×	×		×
		RECORD RPN	EXEC	–	–	–	–	–	–		–
		DELETE RPN	EXEC	–	–	–	–	–	–		–
15	RPN MANAGE	CONC (APR) RESET	EXEC	–	–	–	–	–	–		–
		CONC2(APR) RESET	EXEC	–	–	–	–	–	–		–
		RPN ALL PRESET	EXEC	–	–	–	–	–	–		–
		AUTO CONCEAL	EXEC	–	–	–	–	–	–		–
		AUTO CONCEAL2	EXEC	–	–	–	–	–	–		–
16	VDR MAINTENANCE	AUDIO A/D ADJUST	EXEC	–	–	–	–	–	–		–
		AUDIO D/A ADJUST	EXEC	–	–	–	–	–	–		–
		AU SIDE VOL ADJ	EXEC	–	–	–	–	–	–		–
		POWER A/D ADJUST	EXEC	–	–	–	–	–	–		–
		DRIVE MAINTE	EXEC	–	–	–	–	–	–		–
		SERVICE SUPPORT	EXEC	–	–	–	–	–	–		–
17	FAN	FAN VOLT FIX	OFF	×	▲	×	×	×	×	Initial value	×
		FAN ROTATION DET	OK	–	–	–	–	–	–		–

SERVICE Menu (4/4)

No.	Page	Setup Item	F-SET	ALL	PRST	SCN	REF	LENS	STD	Power OFF	SVC
18	MEASURE	MEASUREMENT MODE	OFF	×	▲	×	×	×	×	Initial value	×
		MASTER BLACK	0	◎	○	◎	○	×	○		◎
		MASTER GAIN(TMP)	Depends on the switch setting.	×	◎	◎	◎	×	○	Depends on the GAIN switch setting.	×
19	FILTER CTEMP	FILTER CTEMP 1	3200	×	▲	×	×	×	×		◎
		FILTER CTEMP 2	3200	×	▲	×	×	×	×		◎
		FILTER CTEMP 3	3200	×	▲	×	×	×	×		◎
		FILTER CTEMP 4	3200	×	▲	×	×	×	×		◎
20	BATTERY INFO	TYPE	----	–	–	–	–	–	–		–
		MFD DATE D/M/Y	--------	–	–	–	–	–	–		–
		CYCLE COUNT	-----	–	–	–	–	–	–		–
		CAPACITY	-----mAh	–	–	–	–	–	–		–
		VOLTAGE	--.-V	–	–	–	–	–	–		–
		CURRENT	----mA	–	–	–	–	–	–		–
		REMAINING(%)	---%	–	–	–	–	–	–		–
		REMAINING(MIN)	---M	–	–	–	–	–	–		–
		MODE	----	–	–	–	–	–	–		–
		STATUS	----	–	–	–	–	–	–		–
21	HOUSE METER2	RESET METER	EXEC	–	–	–	–	–	–		–
		OPERATION	000000H	–	–	–	–	–	–		–
		LASER	000000	–	–	–	–	–	–		–
		OPERATION (rst)	000000H	–	–	–	–	–	–		–
		SPINDLE (rst)	000000H	–	–	–	–	–	–		–
		LOADING (rst)	000000	–	–	–	–	–	–		–
		SEEK (rst)	000000H	–	–	–	–	–	–		–
22	FUNCTION LIMIT	AF DISPLAY	OFF	×	▲	×	×	×	×		◎
23	S/H DC	S/H DC ADJ MODE	OFF	×	▲	×	×	×	×	Initial value	×
		TEST OUT SELECT	VBS	◎	◎	×	△	×	○	Y when R/G/B	◎
		S/H DC B Rch (1)	0	×	▲	×	×	×	×		◎
		S/H DC B Gch (1)	0	×	▲	×	×	×	×		◎
		S/H DC B Bch (1)	0	×	▲	×	×	×	×		◎
24	BOARD INFO	SD REC & PB (DVP)	○	–	–	–	–	–	–		–
		24P REC & PB (DCPxx xx)*	Depends on the installed board	–	–	–	–	–	–		–
		PROCYON-V (DCPxx xx)*	Depends on the installed board	–	–	–	–	–	–		–
		TG VERSION	ROM Version	–	–	–	–	–	–		–
25	SERVICE FILE	SVC FILE LOAD	EXEC	–	–	–	–	–	–		–
		SVC FILE SAVE	EXEC	–	–	–	–	–	–		–
		F.ID	Blank	×	×	×	×	×	×		◎

* : The board name to be displayed is the name of the board that is actually installed.

Section 5
File System

5-1. Structure of File System

The PDW-700 can save data modifications made in the setup menu, as files in the main unit itself and in a memory stick. The file system consists of the USER FILE, ALL FILE, SCENE FILE, REFERENCE FILE and LENS FILE. For details of each file, refer to “4-1. Setup Menus”.

USER FILE

The USER file contains the customized USER menu items and its setups. Up to 100 files can be saved in a memory stick. When this file is saved in a memory stick, the USER menu can be set instantly to the users’ preferred setup by reading the USER file data from the memory stick.

ALL FILE

The ALL file contains the setups of all menus. Up to 100 files can be saved in a memory stick. By saving the ALL file in a memory stick after adjusting the first camera, the user can instantly set the same adjustment setup as the first camera to the second and subsequent cameras by reading the ALL file data from the memory stick.

SCENE FILE

The SCENE file contains the setup value of the paint items adjusted in accordance with the shooting scene. Up to 5 SCENE files can be set in the built-in memory, and up to 100 SCENE files in a memory stick. When an operator saves the setup data optimized for a specific scene during rehearsal, the operator can establish exactly the same setup for the actual take as in the rehearsal by calling the saved setup data.

REFERENCE FILE

The REFERENCE file contains the setup values that serve as a reference for implementing SCENE FILE STANDARD. One file can be saved in the memory stick.

LENS FILE

The LENS file contains setup data that corrects the characteristics unique to each lens (flare, white shading, center marker position, white correction values). Up to 32 LENS files can be saved in the built-in memory, and up to 100 files can be saved in a memory stick.

5-2. Data Structure

Each menu item can be classified into the categories of USER, OPERATION, PAINT and MAINTENANCE. In addition to these categories, each menu item has different data in the USER layer (not the USER menu), PRESET layer, SERVICE layer (not the SERVICE menu) and FACTORY layer.

USER layer: Data layer that can be changed by menu operation.
PRESET layer: Data layer to be registered as the standard setup.
SERVICE layer: Data layer that can be changed by a service engineer after entering the Service mode. For users, this layer is identical to the factory default setup.
FACTORY layer: Data layer that contains factory-adjusted values and fixed values.

∗1: Refer to “4-1-2. How to Display the SERVCE Menu” for entering the service mode.

Data Structure \ Menu	USER	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer						
PRESET layer						
SERVICE layer						
FACTORY layer						

The USER layer, PRESET layer, SERVICE layer and FACTORY layer contain absolute values. The data in the USER layer, which is at the top, is used as the actual setup value.
Regarding the items that change continuously such as DETAIL LEVEL (hereafter referred to as analog data) in the MENU display, when the data in the PRESET layer are changed by performing REFERENCE LOAD (refer to step 4 in 5-3-3) or a similar process that displays the differential values between the USER layer and the PRESET layer (USER mode), the MENU display changes according to the data in the PRESET layer. However, the values actually set do not change. In the Service mode, the MENU display for the analog data shows the differential values between the SERVICE layer and the FACTORY layer.

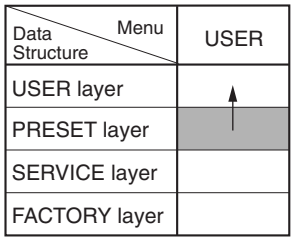
Location where the data of each layer is saved:

USER, PRESET and SERVICE layers: FRAM (AT-177 board)
FACTORY layer: EEPROM (CN-3005, DCP-44 and DR-617 boards) and ROM (fixed value)

5-3. Operating the Files and the Data Flow

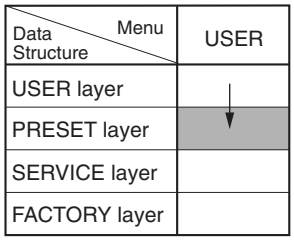
5-3-1. USER FILE

1. Initializing all the items in the USER menu to the default values. (USER PRESET)
   When executing USER PRESET in the USER FILE page under the FILE menu page 1 <F01>, all the items in the USER menu is initialized to the default values.



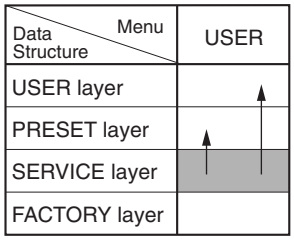
Executing USER PRESET:
Copy the data in the PRESET layer of the USER menu items to the USER layer.

2. Registering the setups of the USER menu as the default values. (STORE USER PRESET)
   When executing STORE USER PRESET on the USER FILE page under the FILE menu page 2 <F02>, all the USER menu items are stored as the default values.



Executing STORE USER PRESET:
Copy the data in the PRESET layer of the USER menu items to the USER layer.

3. Initializing all the USER menu setups to the factory default values. (CLEAR USER PRESET)
   When executing CLEAR USR PRESET on the USER FILE page under the FILE menu page 2 <F02>, all the items in the USER menu are initialized to the factory default values.

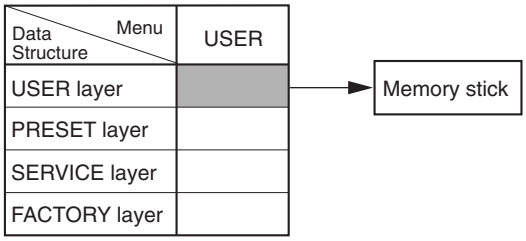


Executing CLEAR USER PRESET:
Copy the data in the SERVICE layer of the USER menu items to the USER and PRESET layers.

Note

After USER PRESET, STORE USER PRESET, or CLEAR USER PRESET is performed, the MENU display for the analog data shows “0”.

4. Saving the setups of the USER menu in the memory stick. (USER FILE SAVE)
When executing USER FILE SAVE on the USER FILE page under the FILE menu page 1 <F01>, all the USER menu items are saved as USER FILE in the memory stick.



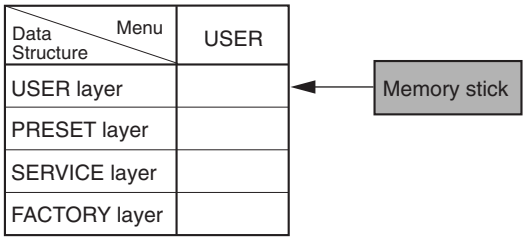
Executing USER FILE SAVE:

Save the data of the USER layer of the USER menu items in the memory stick.

Note

The contents of USER CUSTOMIZE MENU and the WHITE BALANCE data are also saved in the memory stick.

5. Calling the USER file saved in the memory stick. (USER FILE LOAD)
When executing USER FILE LOAD on the USER FILE page under the FILE menu page 1 <F01>, the USER FILE saved in the memory stick are called to the USER layer.
When the same USER FILE is loaded to two units, the same settings are reflected to the both units, but if the data in the PRESET layer are different, the MENU display shows different values.



Executing USER FILE LOAD:

Call the USER FILE saved in the memory stick to the data in the USER layer of the USER menu items.

Note

There are LOAD OPTION setups such as the one to choose whether or not to load the contents of USER CUSTOMIZE MENU when loading the data from the memory stick.

- LOAD CUSTOM DATA: Setup to choose whether or not to call the data to customize the menu
- LOAD OUT OF USER: Setup to choose whether or not to have the data saved in the memory stick call the items that do not exist in the current customized USER menu
- BEFORE FILE PAGE: Setup to choose whether or not to call the USER FILE data saved in the memory stick to the setup data contained in the pages after the USER FILE page, when the USER menu contains the USER FILE page of FILE menu
- USER LOAD WHITE: Setup to choose whether or not to call the WHITE BALANCE data saved in the USER FILE

5-3-2. ALL FILE

Note

Refer to “4-16. Setup Menu List” for the items of object. (ALL: ALL FILE object items.
PRESET: ALL PRESET object items.)

1. Returning the items in the ALL file to the preset value. (ALL PRESET)
   When executing ALL PRESET on the ALL FILE page under the FILE menu page 3 <F03>, the ALL FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are returned to the default values.

Data Structure \ Menu	OPERA-TION	PAINT	MAINTE-NANCE	FILE
USER layer	↑	↑	↑	↑
PRESET layer				
SERVICE layer				
FACTORY layer				

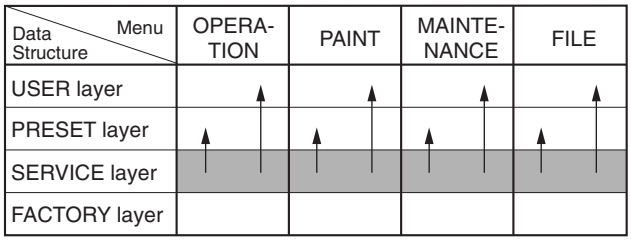
   Executing ALL PRESET:
   Copy the data stored in the PRESET layer of the ALL PRESET object items to the USER layer.

2. Setting the preset values of the ALL PRESET object items. (STORE ALL PRESET)
   When executing STORE ALL PRESET on the ALL FILE page under the FILE menu page 3 <F03>, the ALL FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are saved as the default values.

Data Structure \ Menu	OPERA-TION	PAINT	MAINTE-NANCE	FILE
USER layer				
PRESET layer	↓	↓	↓	↓
SERVICE layer				
FACTORY layer				

   Executing STORE ALL PRESET:
   Copy the data stored in the USER layer of the ALL PRESET object items to the PRESET layer.

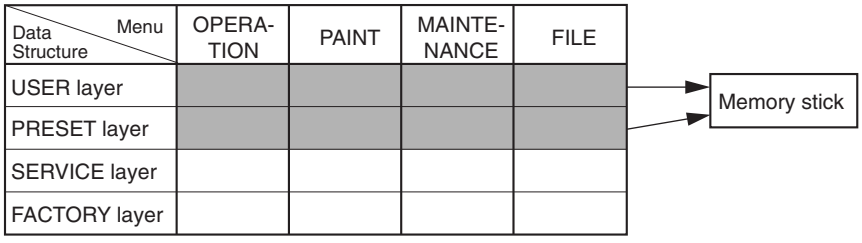
3. Clearing the preset value of the ALL PRESET object items. (CLEAR ALL PRESET)
When executing CLEAR ALL PRESET on the ALL FILE page under the FILE menu page 3 <F03>, the value of the ALL FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are initialized to the factory default value[*1].



Executing CLEAR ALL PRESET:
Copy the data stored in the SERVICE layer of the ALL PRESET object items to the USER and PRESET layers.

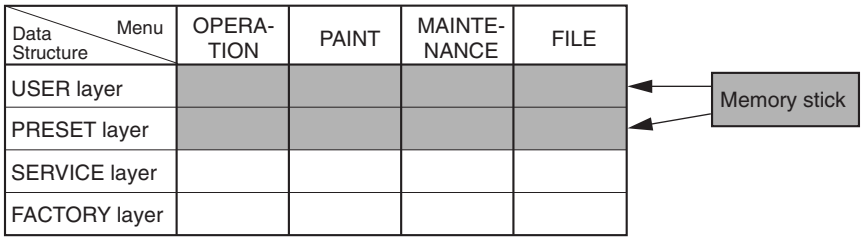
∗1: As the users will use the values set in the service mode as the factory default value, be sure to handle the setup values with care in the service mode.

4. Saving the setups of the ALL FILE object items in the memory stick. (ALL FILE SAVE)
When executing ALL FILE SAVE on the ALL FILE page under the FILE menu page 3 <F03>, the data of the USER and PRESET layers of ALL FILE object items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE) are saved to the memory stick as ALL FILE.



Executing ALL FILE SAVE:
Save the data of the USER and PRESET layers of the ALL FILE object items in the memory stick.

5. Calling the ALL FILE saved in the memory stick. (ALL FILE LOAD)
When executing ALL FILE LOAD on the ALL FILE page under the FILE menu page 3 <F03>, ALL FILE stored in the memory stick are called to the USER layer and the PRESET layer of the ALL FILE object items (corresponding items among OPERATION, PAINT, MAINTENANCE and FILE).



Executing ALL FILE LOAD:
Call ALL FILE stored in the memory stick to the USER and PRESET layers of the ALL FILE object items.

5-3-3. REFERENCE FILE

The REFERENCE FILE data is the same as the one in the PRESET layer. The difference is that the items to be handled as REFERENCE FILE in the PRESET layer are limited.

Note

Refer to “4-16. Setup Menu List” for the items of the REFERENCE FILE.

Data Structure \ Menu	USER	OPERA-TION	PAINT	MAINTE-NANCE	FILE	SERVICE
PRESET layer						

REFERENCE FILE items

1. Saving the REFERENCE FILE in the built-in memory of the PDW-700. (REFERENCE STORE)
   When executing REFERENCE STORE on the REFERENCE page under the FILE menu page 5 <F05>, the REFERENCE FILE items (corresponding items among OPERATION, PAINT and MAINTENANCE) are saved as the default values.

Data Structure \ Menu	OPERA-TION	PAINT	MAINTE-NANCE
USER layer			
PRESET layer	↓	↓	↓
SERVICE layer			
FACTORY layer			

Executing REFERENCE STORE:

Copy the data stored in the USER layer of the REFERENCE FILE items to the PRESET layer.

2. Initializing all the REFERENCE FILE setups to the factory default values. (REFERENCE CLEAR)
   When executing REFERENCE CLEAR on the REFERENCE page under the FILE menu page 5 <F05>, the REFERENCE FILE items (corresponding items among OPERATION, PAINT and MAINTENANCE) are initialized to the factory default value*1.

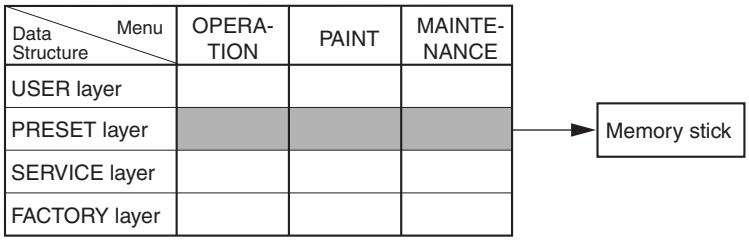
Data Structure \ Menu	OPERA-TION	PAINT	MAINTE-NANCE
USER layer	↑	↑	↑
PRESET layer	↑ ↑	↑ ↑	↑ ↑
SERVICE layer			
FACTORY layer			

Executing REFERENCE CLEAR:

Copy the data stored in the SERVICE layer of the REFERENCE FILE items to the USER and PRESET layers.

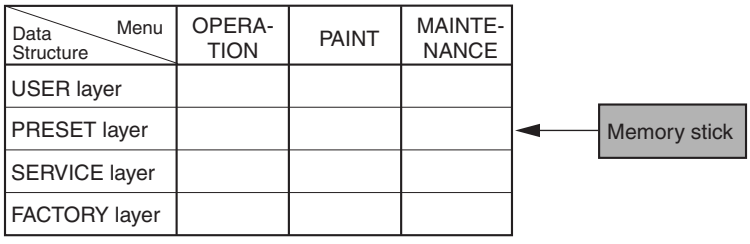
∗1: As the users will use the values set in the service mode as the factory default value, be sure to handle the setup values with care in the service mode.

3. Saving the REFERENCE FILE in the memory stick. (REFERENCE SAVE)
When executing REFERENCE SAVE on the REFERENCE page under the FILE menu page 5 <F05>, the data of the PRESET layer of the REFERENCE FILE items (corresponding items among OPERATION, PAINT and MAINTENANCE) are saved as REFERENCE FILE in the memory stick.



Executing REFERENCE SAVE:
Save the data of the PRESET layer of the REFERENCE FILE items in the memory stick.

4. Calling the REFERENCE FILE saved in the memory stick. (REFERENCE LOAD)
When executing REFERENCE LOAD on the REFERENCE page on the FILE menu page 5 <F05>, the REFERENCE FILE are called to the PRESET layer of the REFERENCE FILE item (corresponding items among OPERATION, PAINT and MAINTENANCE).



Executing REFERENCE LOAD:
Call the REFERENCE FILE stored in the memory stick to the data on the PRESET layer of the REFERENCE FILE items.

Note

Some of the menu items are displayed as the setup data for the newly called REFERENCE (reference value).

(E.g.) DETAIL LEVEL

Display value of PAINT menu: 10
REFERENCE value: 20
} Output value: 30

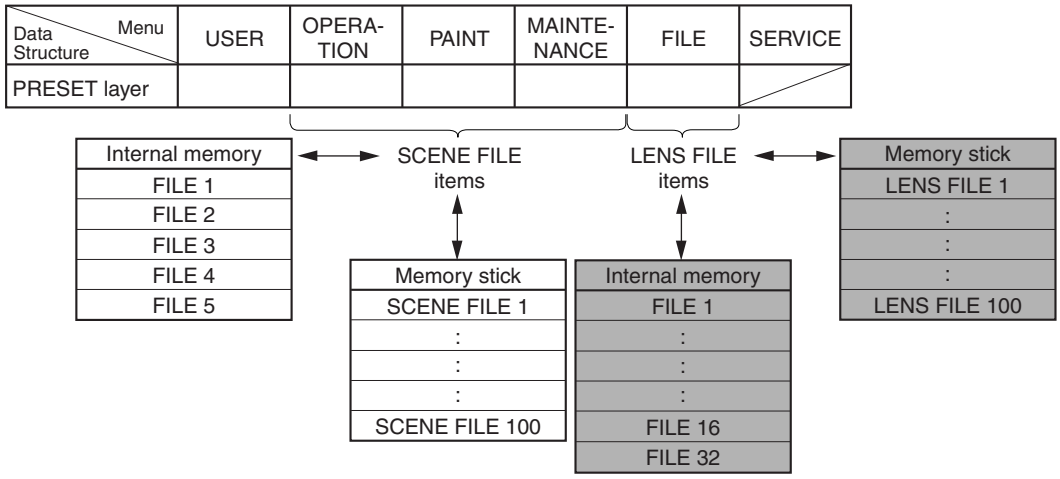
REFERENCE value saved in the memory stick: −10

(Execute REFERENCE LOAD)

Display value of the PAINT menu: 40
REFERENCE value: −10
} Output value: 30 (No difference in the output values before and after execution)

5-3-4. Other FILE (SCENE FILE and LENS FILE)

There is no hierarchical layer structure for the data of SCENE FILE and LENS FILE. The USER layer and the memory area of each file handle all the data.



Note

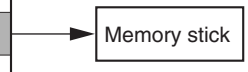
Refer to “4-16. Setup Menu List” for the items of SCENE FILE, LENS FILE and STANDARD.

5-3-5. SERVICE FILE

When the system enters the service mode, most of the items in all the menus belong to the SERVICE layer. If changes are made in the data, the changed data will be saved as the data belonging to the SERVICE layer.

1. Saving the setups for the items to be included in the SERVICE FILE in the memory stick. (SERVICE FILE SAVE)
   When executing SVC FILE SAVE on the SERVICE FILE page under the SERVICE menu page 25 <S25>, the data of the SERVICE FILE items (corresponding items among OPERATION, PAINT, MAINTENANCE FILE and SERVICE) belonging to the SERVICE layer are saved as SERVICE FILE in the memory stick.

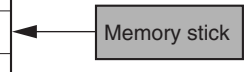
Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer					
PRESET layer					
SERVICE layer					
FACTORY layer					



Executing USER FILE SAVE:
Save the data in the SERVICE layer of the SERVICE FILE item in the memory stick.

2. Calling the SERVICE FILE saved in the memory stick. (SERVICE FILE LOAD)
   When executing SVC FILE LOAD on the SERVICE FILE page under the SERVICE menu page 25 <S25>, the data of the SERVICE FILE (corresponding items among OPERATION, PAINT, MAINTENANCE, FILE and SERVICE) stored in the memory stick are called to the SERVICE layer of the SERVICE FILE item.

Data Structure \ Menu	OPERATION	PAINT	MAINTENANCE	FILE	SERVICE
USER layer					
PRESET layer					
SERVICE layer					
FACTORY layer					

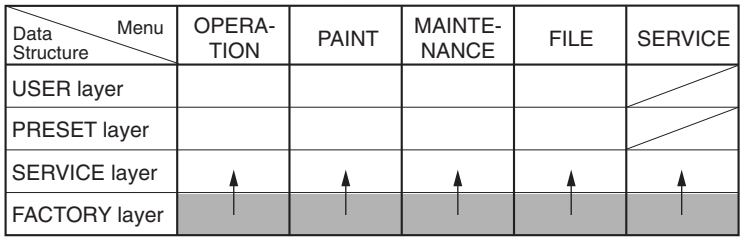


Executing SVC FILE LOAD:
Call the SERVICE FILE stored in the memory stick to the data in the PRESET layer of the SERVICE FILE items.

5-3-6. Other RESET

This section describes SERVICE RESET and FACTORY PRESET in the SERVICE menu.

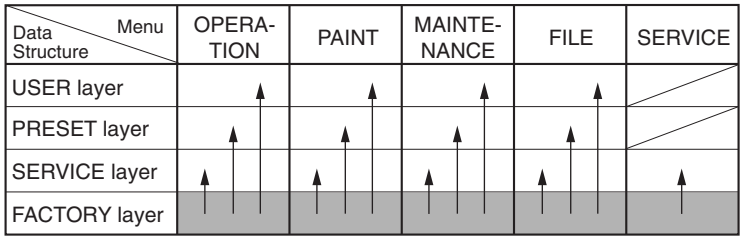
1. Resetting the data changed in the SERVICE mode. (SERVICE RESET)
   When executing SERVICE RESET on the MENU SET page under the SERVICE menu page 1 <S01>, the setups changed in the SERVICE mode are initialized to the factory default value.



Executing SERVICE RESET:

Copy the data in the FACTORY layer to the SERVICE layer.

2. Initializing all the setup data to the factory default values. (FACTORY PRESET)
   When executing FACTORY RESET on the MENU SET page under SERVICE menu page 1 <S01>, all the changed setups except for the DIAGNOSIS menu are initialized to the default value.



Executing FACTORY PRESET:

Copy the data stored in the FACTORY layer to the SERVICE, PRESET and USER layers.

5-4. Special Items to Save

5-4-1. White Gain

Using the ALL FILE

Executing item	Status after execution
ALL FILE SAVE (FILE menu/ALL FILE page)	All the values of the white gain are saved in the ALL FILE. (Filter A/B/C/D, WHITE BAL A/B)
ALL FILE LOAD (FILE menu/ALL FILE page)	All the values of the white gain are overwritten to the value of ALL FILE. (Filter A/B/C/D, WHITE BAL A/B)
STORE ALL PRESET (FILE menu/ALL page)	The value of the preset white gain specified on the MAINTENANCE menu/PRESET WHT page is saved as the value of the PRESET layer (identical to the value of the REFERENCE FILE).
CLEAR ALL PRESET (FILE menu/ALL FILE page)	All the values of the white gain are overwritten to the factory default value. (Filter A/B/C/D, WHITE BAL A/B) The PRESET WHITE R/B GAIN is also changed to the factory default value.
ALL PRESET (FILE menu/ALL FILE page)	All the values of the white gain are overwritten to the value of PRESET layer.

Using the REFERENCE FILE

Executing item	Status after execution
REFERENCE STORE (FILE menu/REFERENCE page)	The current value of the white gain at the time of execution is saved in REFERENCE FILE. (When the WHITE BAL switch is A, the saved value is A. When B, the saved value is B. When PRST, the saved value is PRST.) If REFERENCE STORE is executed when the WHITE BAL switch is A or B, the preset WHITE GAIN to be specified in the MAINTENANCE menu/PRESET WHT page is also overwritten to the value of the saved WHITE GAIN.
REFERENCE CLEAR (FILE menu/REFERENCE page)	When the WHITE BAL switch is A at the time of execution, R/B GAIN of A becomes the default value. When the WHITE BAL switch is B, R/B GAIN of B becomes the factory default value. PRESET WHITE R. B GAIN becomes the default value irrespective of the BAL switch.

Using the SCENE FILE

Executing item	Status after execution
SCENE STORE (FILE menu/SCENE FILE page)	The current value of the white gain at the time of execution is saved in the SCENE FILE. (When the WHITE BAL switch is A, the saved value is A. When B, the saved value is B. When PRST, the saved value is PRST.)
SCENE RECALL (FILE menu/SCENE FILE page)	The current value of the WHITE GAIN at the time execution is overwritten to that of the SCENE file only when “SCENE WHITE DATA” is set to ON in the FILE menu/REFERENCE page. (When the WHITE BAL switch is A, the value of A is overwritten. When it is B, the value of B is overwritten.) However, the value of the preset WHITE GAIN is retained when the WHITE BAL switch is PRST.
SCENE STANDARD (FILE menu/SCENE FILE page)	The current value of the WHITE GAIN at the time of execution is overwritten to that of the REFERENCE file only when “SCENE WHITE DATA” is set to ON in the FILE menu/ REFERENCE page.

5-4-2. Master Gain

The Master Gain value can be saved in the REFERENCE FILE and in the SCENE FILE. When the PDW-700 is used in a standalone manner, the hardware switches are prioritized, so the saved value cannot be read out. When the PDW-700 is connected to the remote controller, the value of the master gain can be read from each file and is retained until a change is made. (The value is retained even after the power is turned off.) When the RM-B150 is connected, the hardware switches of the RM-B150 take precedence.

5-4-3. Shutter

The values of SHUTTER ON/OFF, ECS frequency and SHUTTER SEL can be saved in the SCENE FILE. When the PDW-700 is used in a standalone manner, the value of the ECS frequency and SHUTTER SEL can be read. The values are retained until a change is made. (The values are retained even after the power is turned off.)
(The hardware switches are prioritized for SHUTTER ON/OFF, so the saved value cannot be read out.)

When the PDW-700 is connected to the remote controller, the value of SHUTTER SEL can be read out. The value is retained until a change is made. (The values are retained even after the power is turned off.)

Section 6
Periodic Maintenance and Inspection

6-1. Periodic Check/Replacement Parts List

This table does not describe the guarantee period of each part.
The replacement period of each part is changed according to the environment and condition.

Part to Be Replaced	Hours Meter (Menu item)	Check/Replacement Period	Parts Number and Name
Optical block assembly	Laser parameter (LASER PARAMETER)	Replace every 6000.	⚠ 8-820-389-02 KES-330A/J1RP
Seek motor	Seek running hours (SEEK RUNNING)	Replace every 12000 H.	A-1374-689-A Seek motor assembly
Cleaner assembly	Laser parameter (LASER PARAMETER)	Check every 6000. Replace when bristles of brush become sparse or damaged remarkably.	A-1256-291-A Cleaner (P100) assembly
PS-708 board	Laser parameter (LASER PARAMETER)	Replace around the same time as optical block assembly.	A-1164-283-A PS-708 board
Lithium battery	Current-carrying hours (OPERATION)	About 5 years	⚠ 1-528-174-31 Lithium battery (CR2032)
Loader assembly	Disc loading count* (LOADING)	Replace every 110,000 times.	A-1256-958-B Loader (P100) assembly (RP)
Battery connector	Current-carrying hours (OPERATION)	About 5 years	1-820-459-21 Battery connector

* : This count differs from the actual disc insertion times because the loader up/down count is made by the normal loading operation.

6-2. Cleaning

To make the most of the functions, fully realize the performance of this unit, and to lengthen the life of the unit and cartridge, clean the components often.

6-2-1. General Information for the Use of Cleaning Cloth

1. Cautions

- Be sure turn the power off before cleaning.
- Each block in the drive consists of precision parts and is adjusted precisely. Be careful not to damage the parts and to apply excessive force during cleaning.
- Do not insert a cartridge before cleaning fluid completely evaporates after cleaning.

2. Preparation

(1) Turn the power off.
(2) Remove the loader assembly.
(Refer to Section 7-1-1.)

6-2-2. Cleaning Loader Assembly

Precautions

The loader assembly consists of precision parts.
Be careful not to damage and give excessive force to the parts.

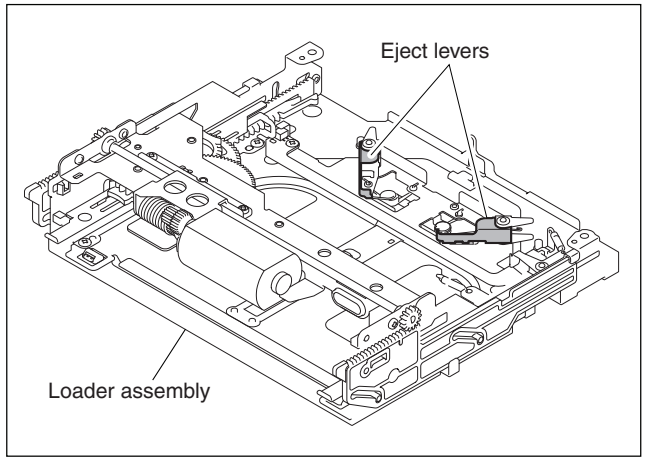
Cleaning Procedure

Tools

- Cleaning cloth (or cotton swab)
- Cleaning fluid (alcohol)

Procedure

1. Clean the eject levers in the loader assembly using the cleaning cloth (or cotton swab) with the cleaning fluid soaked.



6-2-3. Cleaning Spindle Motor

Precautions

- To prevent the possibility of damage to the optical block assembly in the drive by static electricity charged in a human body or clothes, be sure to establish a ground before cleaning the drive assembly.
  (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- The drive assembly consists of precision parts.
  Be careful not to damage and give excessive force to the parts.

Cleaning Procedure

Tools

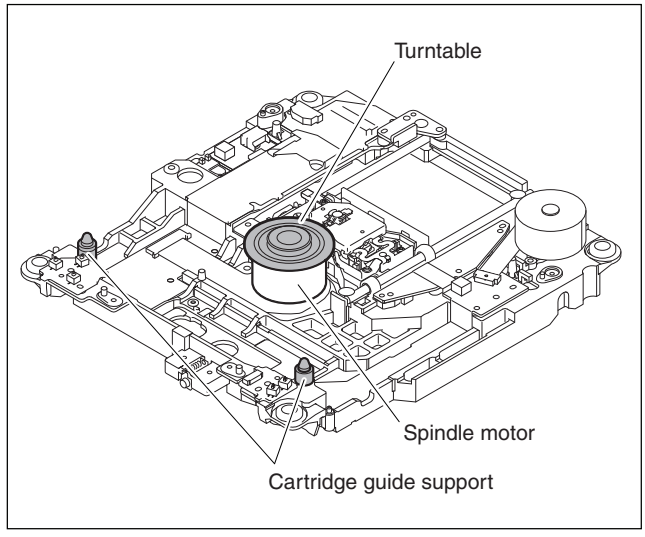
- Cleaning cloth (or cotton swab)
- Cleaning fluid (alcohol)

Procedure

1. Remove dust and dirt attached to the turntable of the spindle motor and the cartridge guide supports using the cleaning cloth (or cotton swabs) with the cleaning fluid soaked.

Note

After the cleaning, ensure that fibers of the cleaning cloth (or cotton swab) are not attached on the spindle motor.



6-2-4. Cleaning Pickup Lens

Error codes “02-020” may be displayed due to smudged optical pickup lens. (Refer to Section 3-2-2.)
If “02-020” is displayed, be sure to clean the pickup lens referring to “LENS CLEANING Menu”.
(Refer to Section 4-10-17.)

Note

Before cleaning, be sure to unload the disc from the unit.

6-3. Cares after Using under Special Environment

Checking the followings is recommended when returned from the news gathering at seaside, at the dusty locations, at hot spring, or if the unit is heavily splashed with water or water leaks in the unit in the rough weather or the like.

1. Carefully clean off sand and dust that entered the unit with airbrush or the like.
2. If salt contained in seawater or sulfur contained in hot spring attaches to the non-painted surface of outer cabinet, the cabinet may corrode in white.
   If it attaches, wipe it off immediately with alcohol.
3. If water leaks inside the unit, turn off the power and dry the unit with hair-dryer and so on. Check especially that water does not remain in the CCD block or the power supply block.
   Note
   If the unit is not taken care of appropriately, corrosion may occur inside that may cause fire and electric shock.

4. Clean out the contacting surface of connectors.
5. Perform the general operational check and confirm that no abnormal sound is heard from inside the unit or the unit operates correctly without any abnormality.

6-4. Digital Hours Meter

The hours meter has six types of display mode. The operation hours or operation count of the PDW-700 can be accumulated for each mode and displayed on the viewfinder.
The hours meter can be reset as desired.
Use the hours meter as a reference for periodic inspection.
The display can also be checked on the HOURS METER page of the DIAGNOSIS menu (Cannot be reset in the DIAGNOSIS menu). Display and reset are carried out by using the HOURS METER 2 page in the SERVICE menu.

Description of HOURS METER 2 page (SERVICE menu)

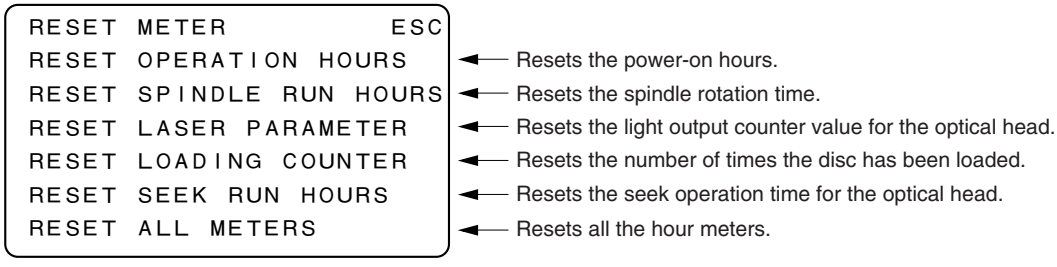
For the description of the HOURS METER 2 page of the SERVICE menu, refer to Section 4 “4-9. Service Menu”.

6-4-1. Display Method and Reset Methods

Refer to “4-9. SERVICE Menu” for the display of the SERVICE menu.

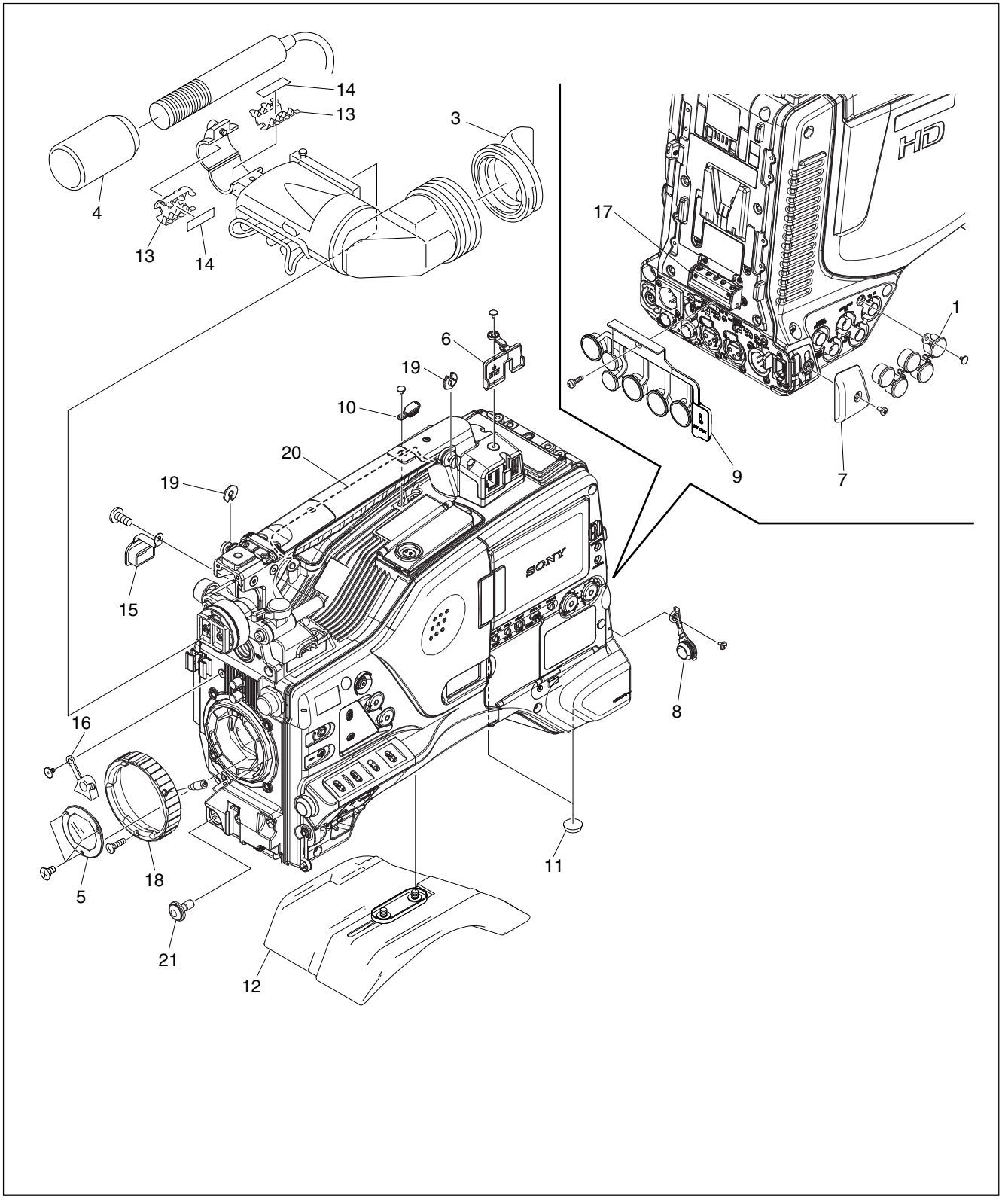
Reset Methods

1. Display the SERVICE menu. (Refer to “4-9. SERVICE Menu” .)
   (TOP MENU is displayed on the viewfinder screen.)
2. Select “SERVICE” from the TOP MENU and press the MENU knob.
3. Rotate the MENU knob to scroll the screen up to HOURS METER 2, and press the knob.
4. Rotate the MENU knob to move the cursor onto RESET METER , and press the knob. Move to the RESET METER screen.
5. Rotate the MENU knob to move the cursor to the desired hours meter.
6. Press the MENU knob. The accumulated time of the selected hours meter is reset.


RESET METER ESC
RESET OPERATION HOURS
Resets the power-on hours.
RESET SPINDLE RUN HOURS
Resets the spindle rotation time.
RESET LASER PARAMETER
Resets the light output counter value for the optical head.
RESET LOADING COUNTER
Resets the number of times the disc has been loaded.
RESET SEEK RUN HOURS
Resets the seek operation time for the optical head.
RESET ALL METERS
Resets all the hour meters.

6-5. Recommended Replacement Parts

This section describes the recommended replacement parts and recommended replacement time.



Recommended replacement parts

ID	Part name	Sony part No.	Recommended replacement timing
1	Cover BNC (PH3)	3-870-160-01	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
3	Eye cup kit (RP)	A-8319-943-B	
4	Wind screen	A-1096-362-A	
5	Filter unit, optical	1-788-765-11	It can become nebulous (intransparent and whitened) with elapse of time. Then it will not meet the required characteristics. Replace it as needed.
6	Cover (handle), connector	3-870-237-01	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
7	Protector	3-870-158-01	
8	Cover, headphone jack	3-870-140-01	
9	Cover (XLR), drop protection	3-870-246-02	
10	Cap ME	3-870-253-02	
11	Foot, rubber	3-723-097-01	
12	Pad assembly, shoulder	A-8279-878-G	
13	GEL, MIC	3-854-132-01	
14	Tape (A)	3-941-343-01	
15	Light connector cover	3-877-892-01	
16	Holder lens mount	3-796-982-02	
17	Battery connector	1-820-459-21	
18	Ring, mount	3-186-442-01	Replace every 5 years.
19	Collar, suspension	3-654-615-02	Check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.
20	Cover bottom, handle	3-796-975-02	
21	VTR start button	3-986-632-02	Replace every about 3 years, or check for deformation and deterioration (abraded or damaged or lost) from time to time. Replace it as necessary.*

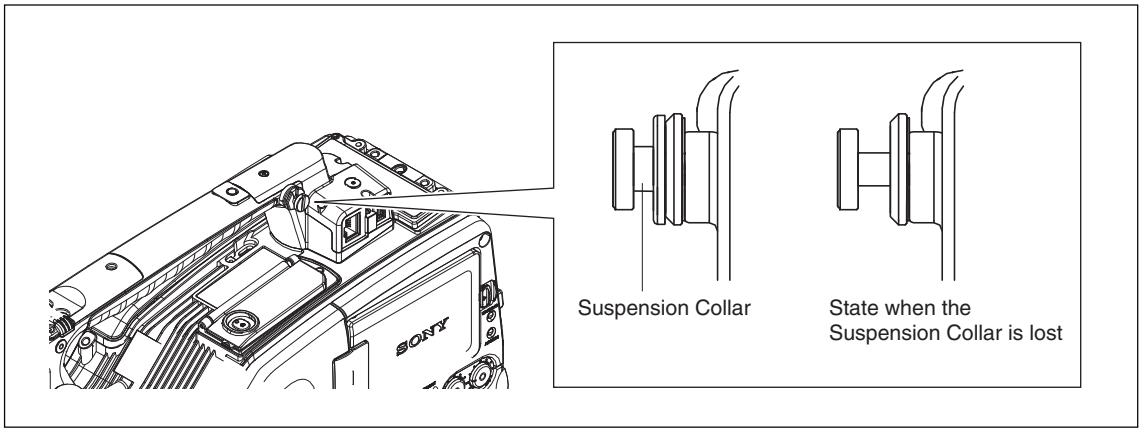
* : When the part is replaced, apply the instant adhesive (Loctite 408 or equivalent) to the whole area of the flange from the back side with care not to ooze out to cosmetic surface.

6-6. Precautions for the Battery Connector

The battery connector in this unit is consumable parts. Replace ever about 5 years.
If the terminal of connector is deformed or bends due to vibrations or shock, or if the surface of the terminal corrodes due to long-term outside use or other similar use, the unit may malfunction.
Replace the battery connector immediately if the terminal is deformed or bends, or if the surface color changes. (Refer to Section 1-7-10.)

6-7. Precaution on Hanging Bracket of Handle

- If the Suspension Collar of the Hanging Bracket is deteriorated (abraded or damaged or lost);
  → Replace the Suspension Collar (3-654-615-02).
- If the Hanging Bracket itself is deformed or becomes loose;
  → Replace the Handle Sub Assembly (A-1541-491-A).



Section 7
Replacement of Main Parts

This section explains the replacement procedures of periodic replacement parts, main mechanical parts, and circuit boards.

7-1. Optical Drive Assembly

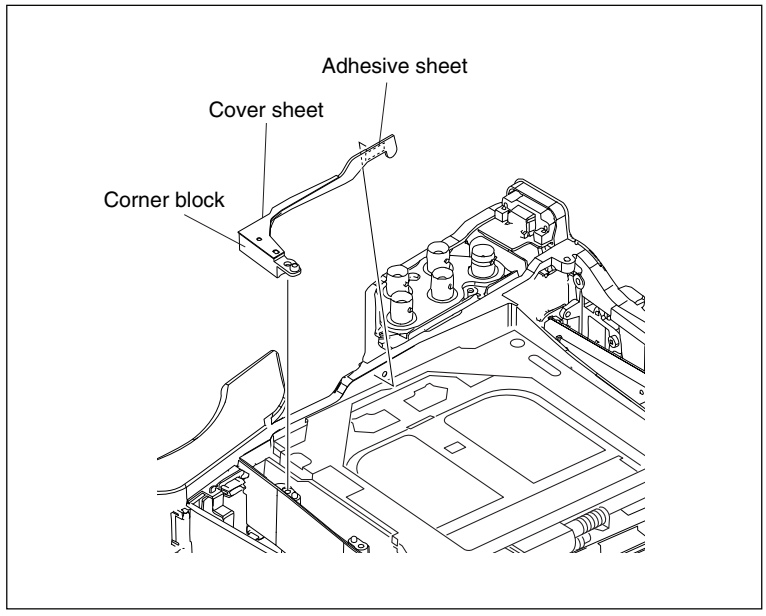
7-1-1. Removing/Reinstalling Loader Assembly

Notes

- When a cartridge is already being inserted in the unit, be sure to take it out beforehand. If you cannot take out the cartridge with normal operation, refer to “1-6. How to Take Out a Cartridge Manually”.
- The loader assembly require periodic replacement, Refer to “6-1. Periodic Check/Replacement Parts List” for details.
- The optical block assembly in the drive may be damaged by static electricity charged in a human body or clothes.
  Therefore, be sure to establish a ground before starting an operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- Life of flexible card wire and flexible board will be significantly shortened if they are folded. Flexible board is easily cut. Be very careful not to fold them.

Removal

1. Remove the outside panel assembly.
   (Refer to Section 1-7-1.)
2. Remove the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet.
4. Remove the SW guard assembly.
   (Refer to Section 1-7-6.)



5. Disconnect the flexible card wire from the connector (CN1) on the SW-1125G board.
6. Fully loosen the two screws fixing the loader assembly and remove it in the direction of the arrow “A”.

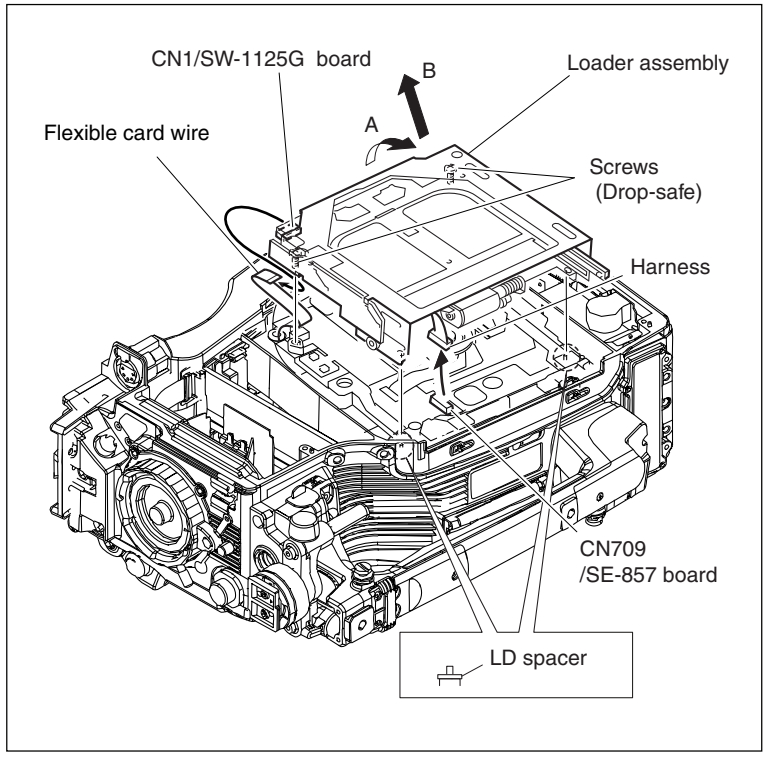
   Note

   These screws have a drop-safe so that the screws cannot be removed from the loader assembly.

7. Remove the loader assembly in the direction of the arrow “B”, and disconnect the harness from the connector (CN709) on the SE-857 board.

   Notes

   - Be careful not to lose the two LD spacers.
   - The spindle motor has an intense powerful magnet. Remove the loader assembly, being careful not to be attracted by the magnetic force or not to be caught by the edge of the spindle motor.

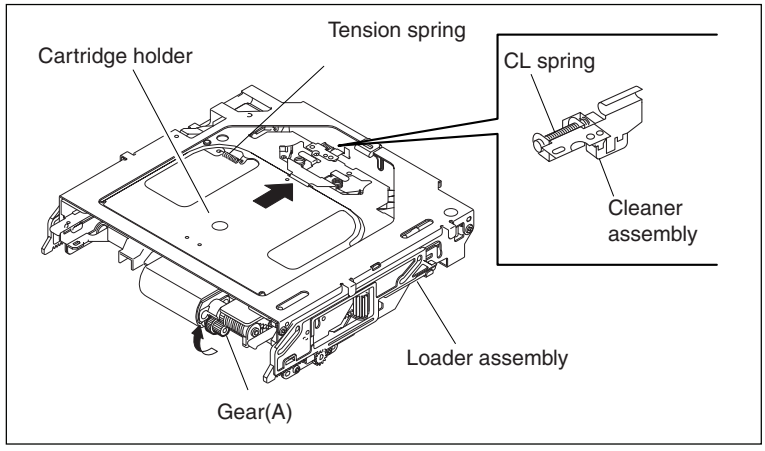


Reinstallation

Note

When installing, take care so that the torsion spring and CL spring do not come off.

1. Rotate the gear (A) to move the cartridge holder in the direction of the arrow until it will stop.

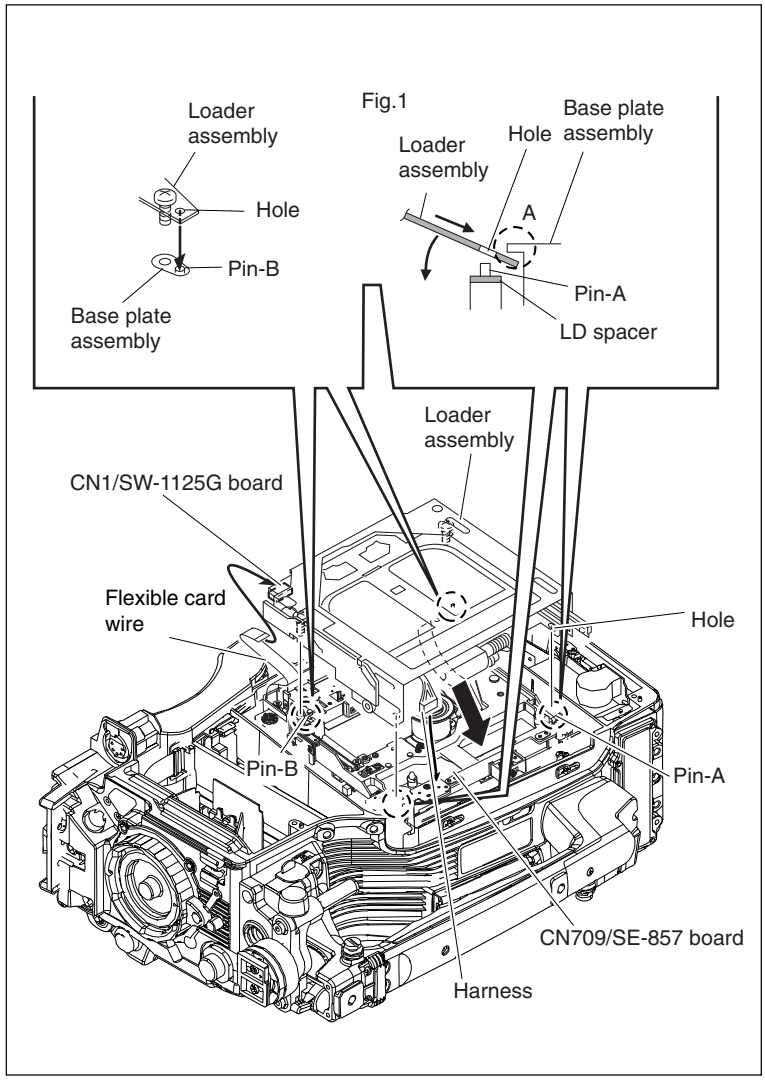


2. Connect the harness to the connector (CN709) on the SE-857 board.
3. Insert the upper part of the loader assembly underneath the portion "A" of the base plate assembly, and align the four positioning pins of the base plate assembly with the four holes of the loader assembly as shown in Fig.1.
4. Reinstall the loader assembly in the base plate assembly, and fix it using the two screws with drop-safe stoppers.

   Note

   Confirm that the LD spacer is correctly installed in the positioning pin-A (at two locations).

5. Connect the flexible card wire to the connector (CN1) on the SW-1125G board.
6. Reinstall the SW guard assembly. (Refer to Section 1-7-6.)

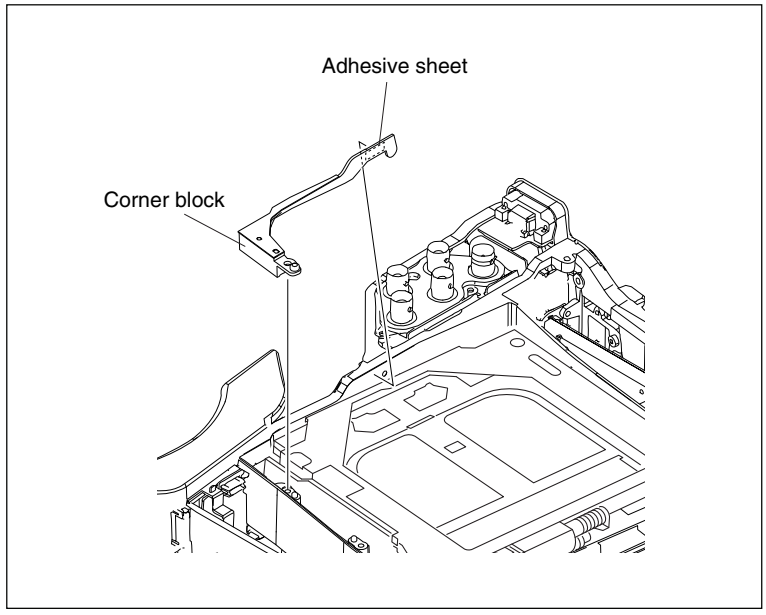


7. Reinstall the corner block.

Note

When reinstall the corner block, replace an adhesive sheet with a new one.
(Adhesive sheet : 3-870-265-01)

8. Reinstall the laser caution sheet.
(Refer to Section 1-6-2 step 2.)
9. Reinstall the outside panel assembly.
(Refer to Section 1-7-2.)



7-1-2. Removing/Reinstalling Drive Sub Assembly

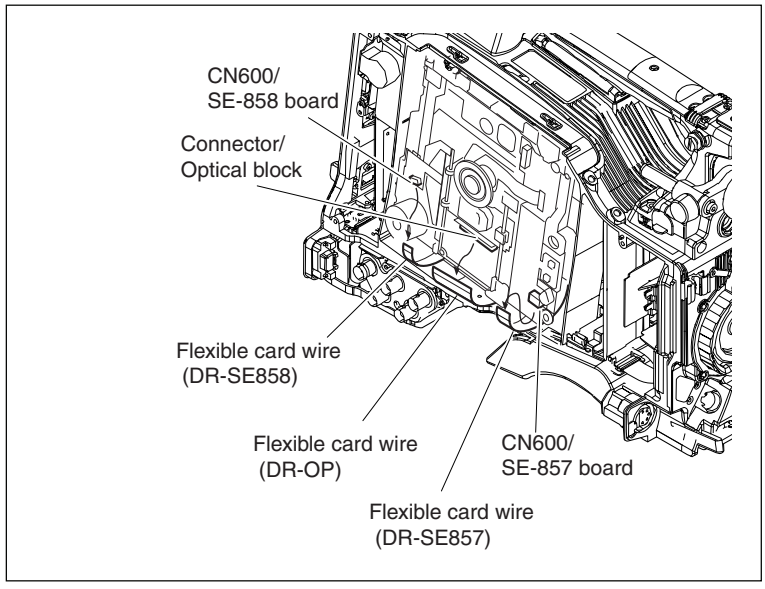
Notes

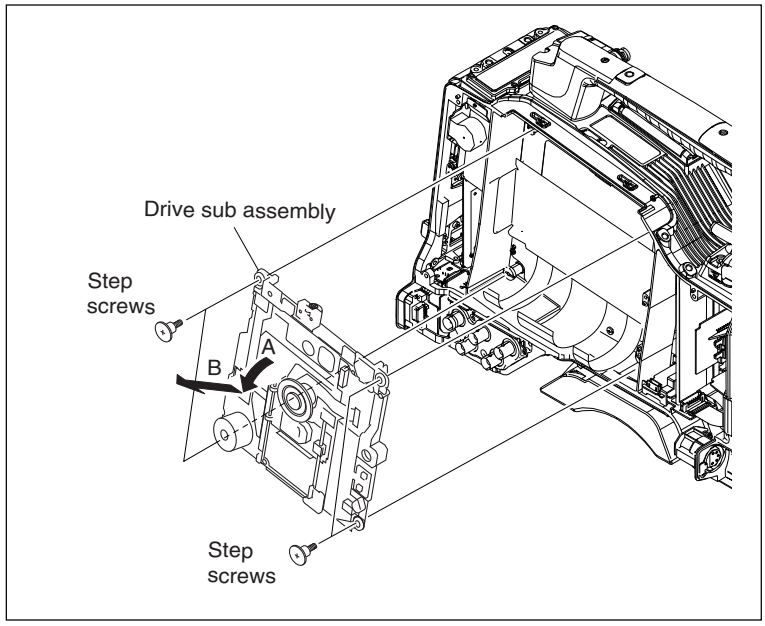
- The optical block assembly in the drive may be damaged by static electricity charged in a human body or clothes.
  Therefore, be sure to establish a ground before starting an operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- Life of flexible card wire and flexible board will be significantly shortened if they are folded. Flexible board is easily cut. Be very careful not to fold them.

Removal

1. Remove the outside panel assembly.
   (Refer to Section 1-7-1.)
2. Remove the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet.
   (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly.
   (Refer to Section 1-7-6.)
5. Remove the loader assembly.
   (Refer to Section 7-1-1.)
6. Disconnect the flexible board (DR-SE857) from the connector (CN600) on the SE-857 board.
7. Disconnect the flexible board (DR-SE858) from the connector (CN600) on the SE-858 board.
8. Disconnect the flexible board (DR-OP) from the connector on the optical block assembly.

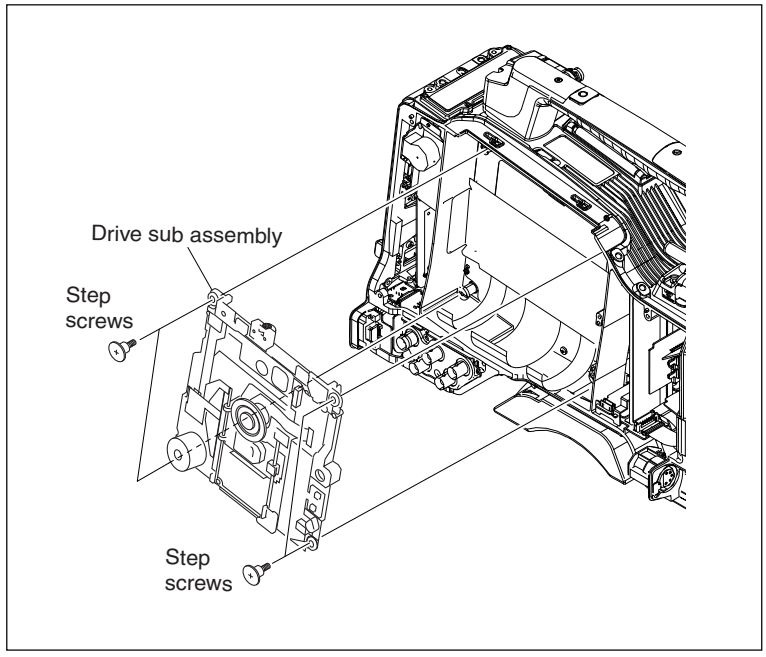
9. Remove the four step screws, and draw out the drive sub assembly in the direction of the arrow “A” and then of the arrow “B”.





Reinstallation

1. Reinstall the drive sub assembly with the four step screws.
   Tightening torque:
   $53 \times 10^{-2} \pm 0.01$ N•m (5.3 × 0.1 kgf•cm)

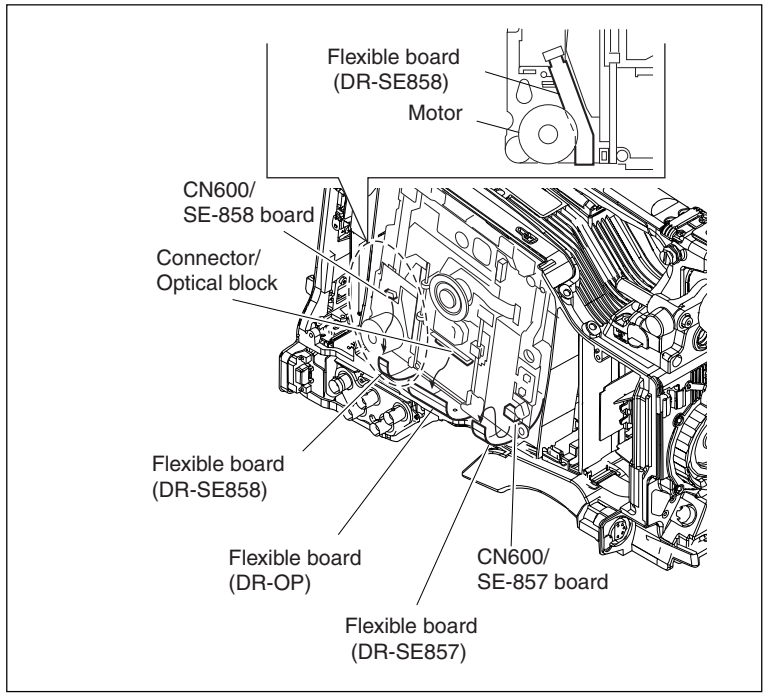


2. Connect the flexible board (DR-OP) to the connector on the optical block assembly.
3. Connect the flexible board (DR-SE858) to the connector (CN600) on the SE-858 board.

   Note

   Place the flexible board (DR-SE858) in the way that it is routed in between the motor and the chassis.

4. Connect the flexible board (DR-SE857) to the connector (CN600) on the SE-857 board.
5. Reinstall the loader assembly.
   (Refer to Section 7-1-1.)
6. Reinstall the SW guard assembly.
   (Refer to Section 1-7-6.)
7. Reinstall the corner block.
   (Refer to Section 7-1-1.)
8. Reinstall the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
9. Reinstall the outside panel.
   (Refer to Section 1-7-2.)



7-1-3. Replacing Cleaner Assembly

Notes

- The Cleaner assembly requires periodic check. Refer to "6-1. Periodic Check/Replacement Parts List" for details.
- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.

1. Remove the outside panel assembly.
   (Refer to Section 1-7-1.)
2. Remove the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet.
   (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly.
   (Refer to Section 1-7-6.)
5. Remove the loader assembly.
   (Refer to Section 7-1-1.)
6. Remove the screw, and remove the cleaner assembly.

   Notes

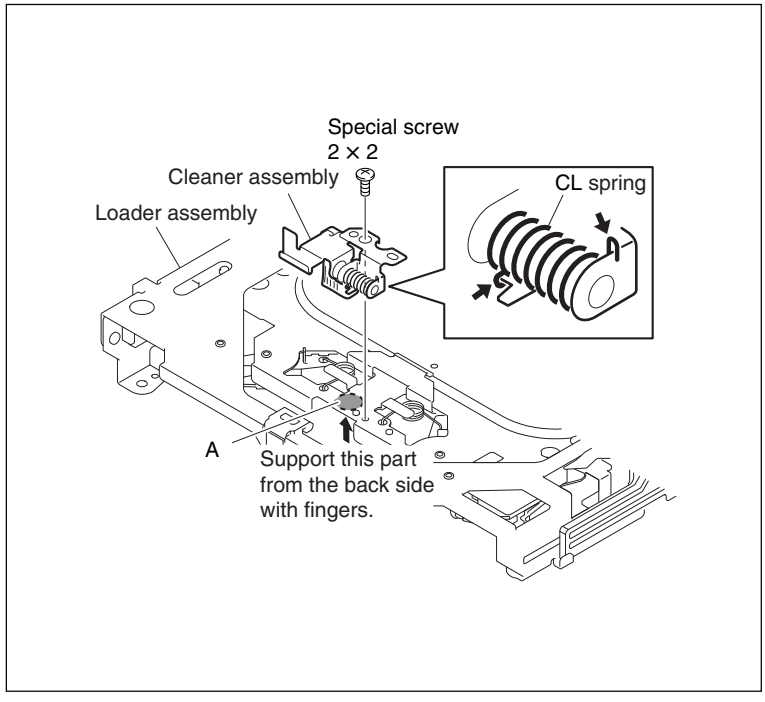
   - Be careful not to deform the loader assembly.
   - Take care so that the CL spring does not come off.

7. While pressing portion A on the back of the loader assembly with fingers, remove the screw to remove the cleaner assembly.

   Notes

   - When installing, take care so that the CL spring does not come off.
   - When tightening the screw, support the loader assembly with fingers not to deform it.

8. Reinstall the removed parts by reversing steps 1 to 5.



7-1-4. Replacing Loading Motor Assembly

Notes

- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.

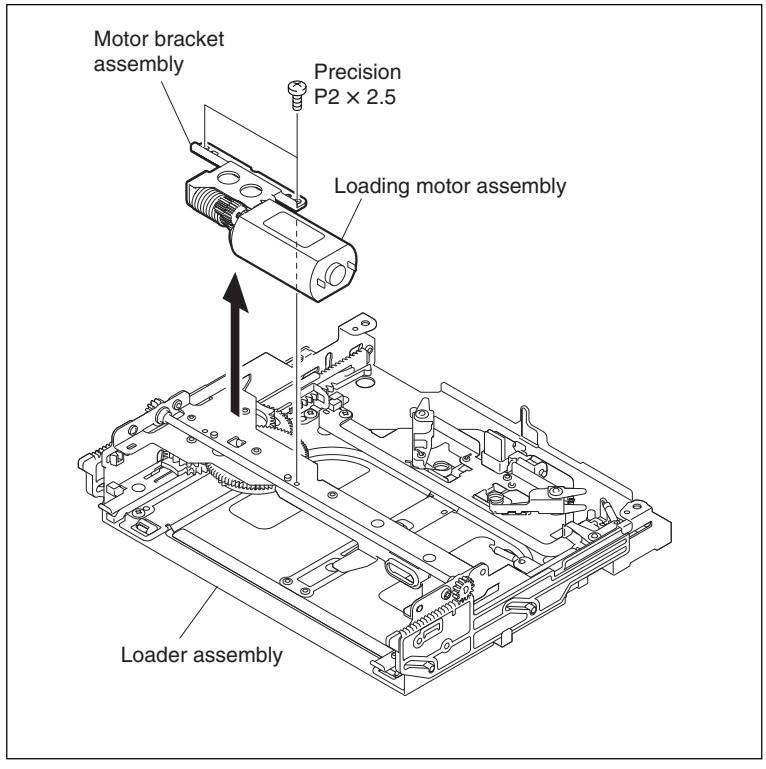
Fixtures

- locking compound

1. Remove the outside panel.
   (Refer to Section 1-7-1.)
2. Remove the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet.
   (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly.
   (Refer to Section 1-7-6.)
5. Remove the loader assembly.
   (Refer to Section 7-1-1.)
6. Remove the SE-709 board.
   (Refer to Section 7-2-1.)
7. Remove the two screws, and remove the motor bracket assembly and the loading motor assembly.

   Note

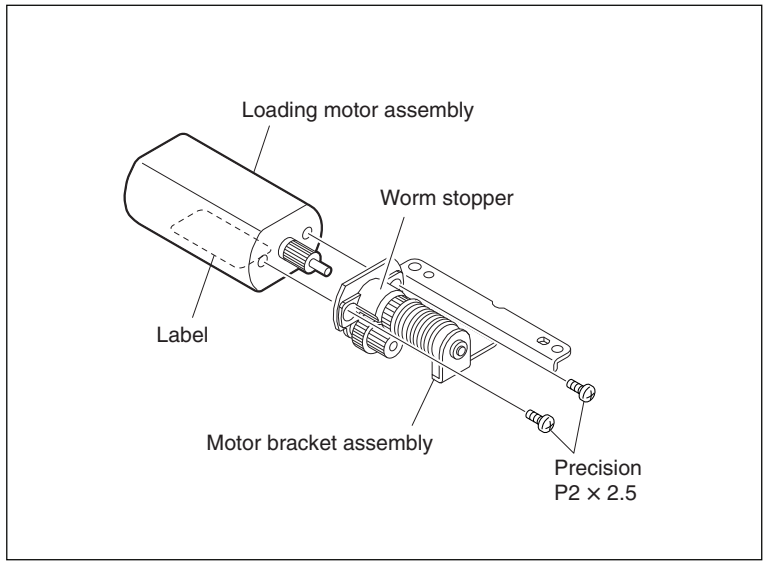
   When reassembling, apply locking compound to the two screws.



8. Remove the two screws to detach the loading motor assembly.

   Note

   Take care so that the worm stopper does not come off.



9. Install a new loading motor assembly by reversing steps 1 to 8.

7-1-5. Replacing Optical Block Assembly

Notes

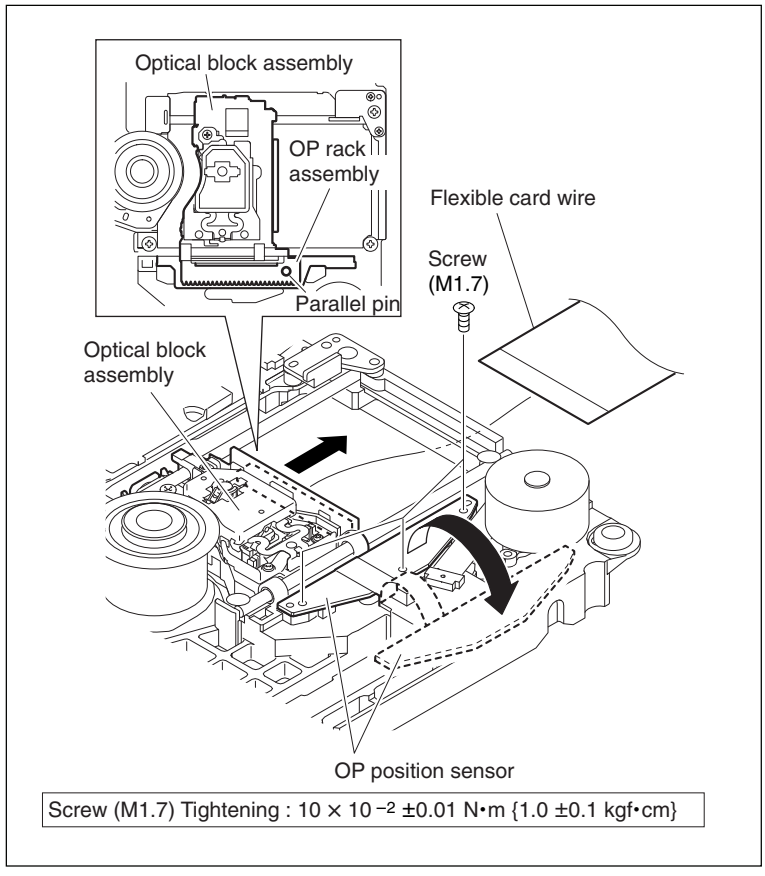
- The optical block assembly requires periodic replacement. Refer to "6-1. Periodic Check/Replacement Parts List" for details.
- To prevent the possibility of damage to the optical block assembly in the drive by static electricity charged in a human body or clothes, be sure to establish a ground before cleaning the drive assembly. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a metallic material such as a screwdriver, reflection block and so on hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- Life of flexible card wire and flexible board will be significantly shortened if they are folded. Flexible board is easily cut. Be very careful not to fold them.

Fixtures

- Cleaning liquid
- Cleaning cloth
- Parallel pin (2 × 20) : 1

Removal

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the laser caution sheet. (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet. (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly. (Refer to Section 1-7-6.)
5. Remove the loader assembly. (Refer to Section 7-1-1.)
6. Disconnect the flexible card wire from the connector on the optical block assembly.
7. Remove the three screws from the OP position sensor on the SE-858 board.
8. Move the OP position sensor and press the die-casting part of the optical block assembly until entire OP rack assembly is visible.
9. Insert the parallel pin into the hole of the OP rack assembly.

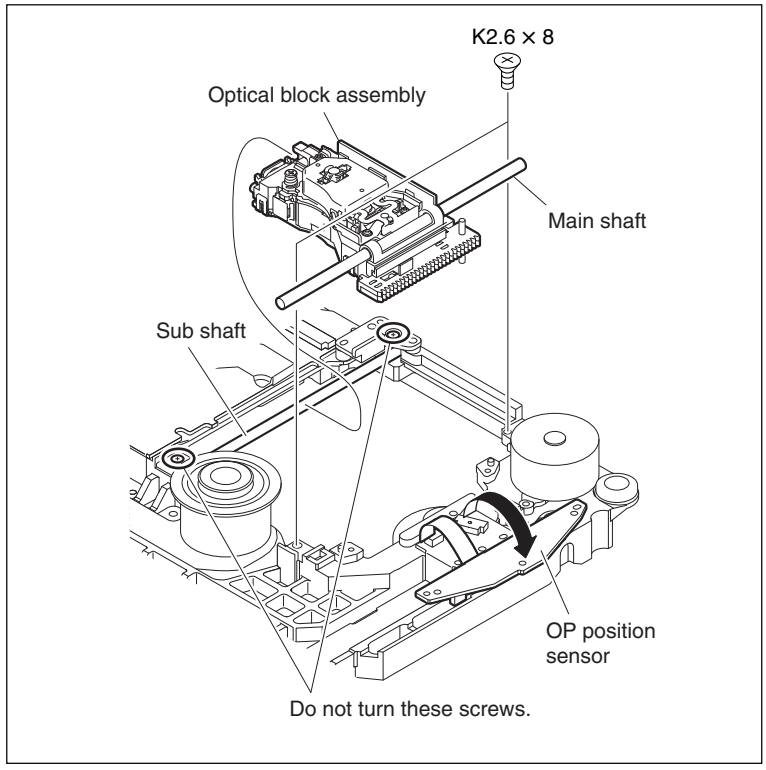

Optical block assembly
OP rack assembly
Flexible card wire
Screw (M1.7)
Parallel pin
Optical block assembly
OP position sensor
Screw (M1.7) Tightening : 10 × 10 −2 ±0.01 N•m {1.0 ±0.1 kgf•cm}

10. Remove the two flat-head screws from the main shaft.

Note

Do not turn the two screws that secure the sub shaft.

11. Move the OP position sensor, and remove the optical block assembly and the main shaft.



Cleaning

1. Clean the spindle motor.
(Refer to Section 6-2-3.)

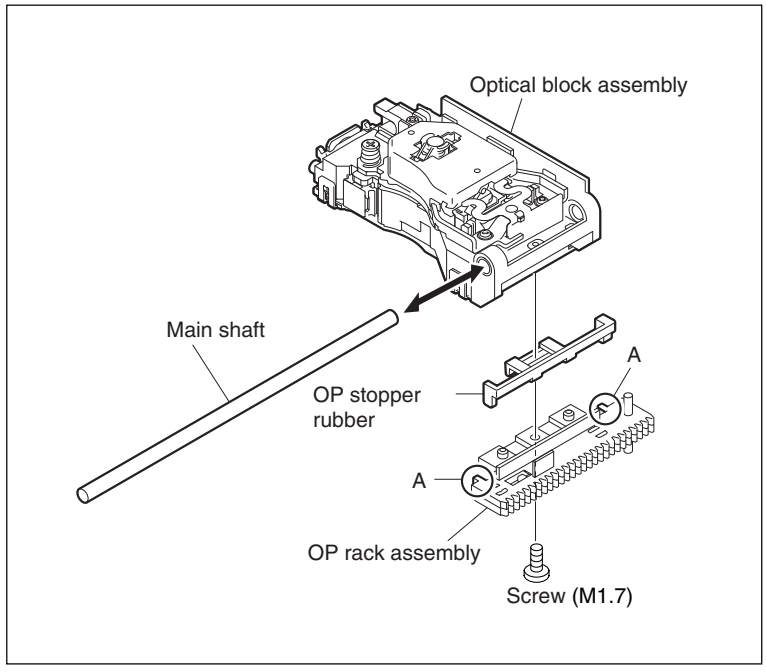
Replacement

1. Detach the main shaft from the removed optical block assembly, and clean the main shaft using a cleaning cloth with cleaning fluid soaked.
2. Clean the sub shaft using a cleaning cloth with cleaning fluid soaked.
3. Remove the screw to remove the OP rack assembly and the OP stopper rubber.
4. Install the OP stopper rubber and the OP rack assembly onto a new optical block assembly with a screw.
Tightening torque:
$10 \times 10^{-2} \pm 0.01$ N•m (1.0 ±0.1 kgf•cm)

Notes

- If the OP stopper rubber is deformed or deteriorated, replace it with a new one.
- Be careful so that the OP stopper rubber does not come out of the both ends (portion A) of the OP rack assembly.

5. Pass the main shaft through the new optical block assembly.



Reinstallation

1. Align the upper and lower holes of the OP rack assembly while pressing the both ends of the OP rack assembly, and insert the parallel pin into the holes.
2. Move the OP position sensor, insert the guide into the sub shaft, and install the optical block assembly and the main shaft.

   Notes

   - Install these parts so that the gear of the OP rack assembly is properly engaged with the gear of the No.3 gear assembly.
   - The laser part of the optical block assembly is precisely positioned. Do not hit the laser part against the sub shaft or the chassis when installing the optical block assembly.

3. Press the connector of the optical block assembly to move the optical block assembly to the spindle motor.
4. Install the main shaft with the two flat-head screws.

   Tightening torque:

   $20 \times 10^{-2} \pm 0.01$ N•m (2.0 ±0.1 kgf•cm)

   Note

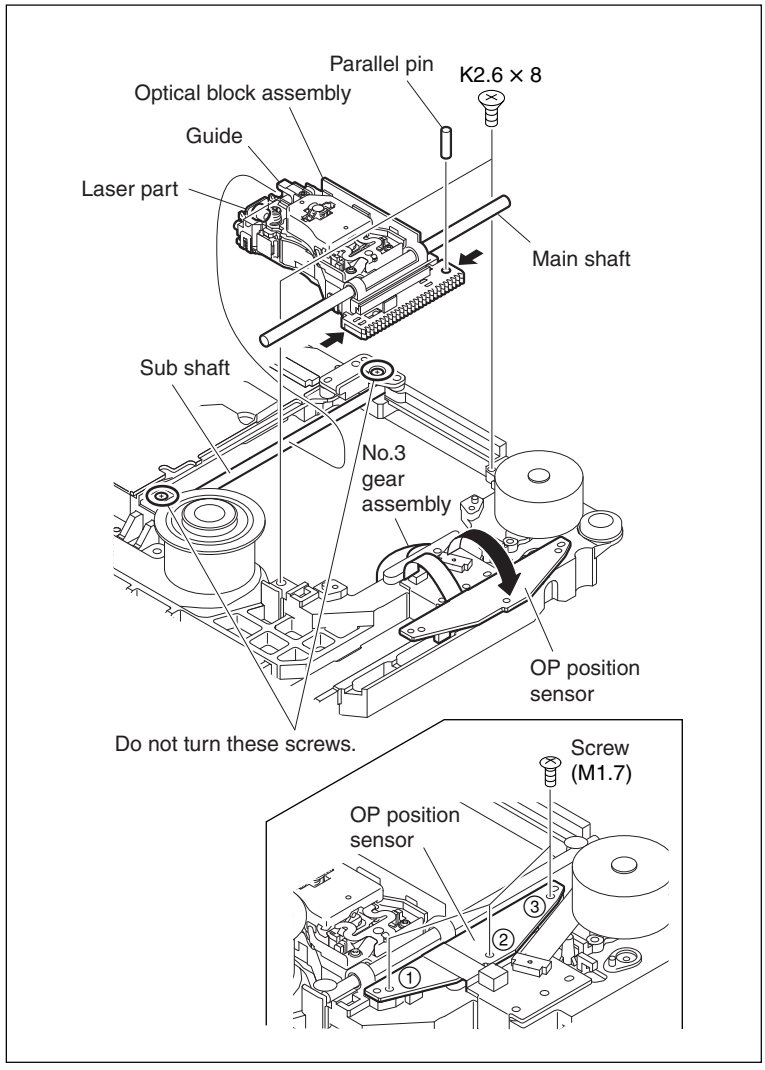
   Do not turn the two screws that secure the sub shaft.

5. Pull out the parallel pin.
6. Press the die-casting part or the connector of the optical block assembly, and check the following:
   - The optical block assembly moves smoothly.
   - The OP rack assembly and the No.3 gear assembly are not disengaged.

7. Install the OP position sensor with three screws in the order of the numbers in the figure.

   Tightening torque:

   $10 \times 10^{-2} \pm 0.01$ N•m (1.0 ±0.1 kgf•cm)
8. Connect the flexible card wire to the connector on the optical block assembly.
9. Perform the optical drive adjustment. (Refer to Section 8.)
10. Reinstall the removed parts by reversing steps 1 to 5 of removal.



7-1-6. Replacing No.2/No.3 Gear Assemblies

Notes

- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.

Fixtures

- Parallel pin (2 × 20) : 2
- Stopper washer : 2

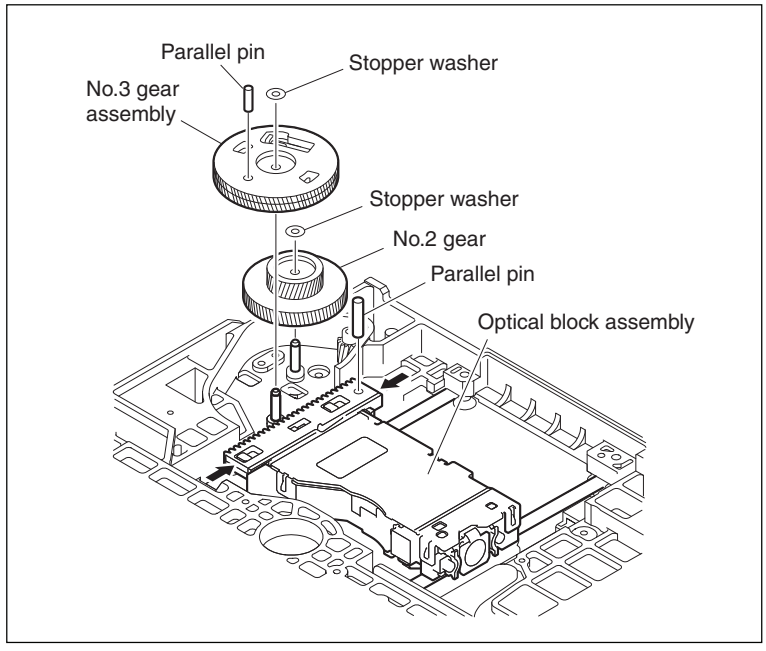
Removal

1. Remove the outside panel assembly. (Refer to Section 1-7-1.)
2. Remove the laser caution sheet. (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet. (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly. (Refer to Section 1-7-6.)
5. Remove the loader assembly. (Refer to Section 7-1-1.)
6. Remove the drive sub assembly. (Refer to Section 7-1-2.)
7. Reverse the drive sub assembly.

   Note

   Do not to put the drive sub assembly reversed on anywhere. If it is put, this may cause damage to the spindle motor or the optical block assembly.

8. Align the position of the upper and the lower holes of the No.3 gear, and insert the parallel pin.
9. Move the optical block assembly to the position shown in the figure while pressing the die-casting part of the optical block assembly.
10. Align the upper and lower holes of the OP rack assembly while pressing the both ends of the OP rack assembly, and insert the parallel pin into the holes.
11. Remove the stopper washer, and remove the No.3 gear assembly.
12. Remove the stopper washer, and remove the No.2 gear.



Reinstallation

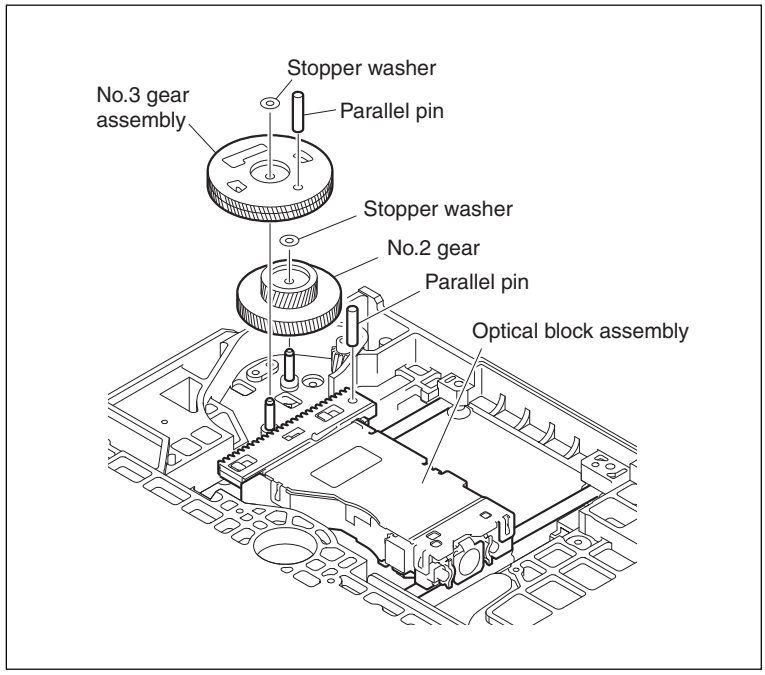
1. Install the No.2 gear onto the base plate shaft.
2. Align the upper and lower holes of the No.3 gear assembly while turning the No.3 gear assembly, and insert the parallel pin into the holes.
3. Install the No.3 gear assembly onto the base plate.

   Note

   Install the No.3 gear assembly so that the gear of the No.3 gear assembly is properly engaged with the gear of the OP rack assembly and with the No.2 gear.

4. Attach two stopper washers to the two shafts of the base plate.
5. Pull out the two parallel pins.
6. Press the die-casting part or the connector of the optical block assembly, and check the following:
   - The optical block assembly moves smoothly.
   - The OP rack assembly and the No.3 gear assembly are not disengaged.

7. Reinstall the removed parts by reversing steps 1 to 7 of removal.



7-1-7. Replacing Seek Motor Assembly

Notes

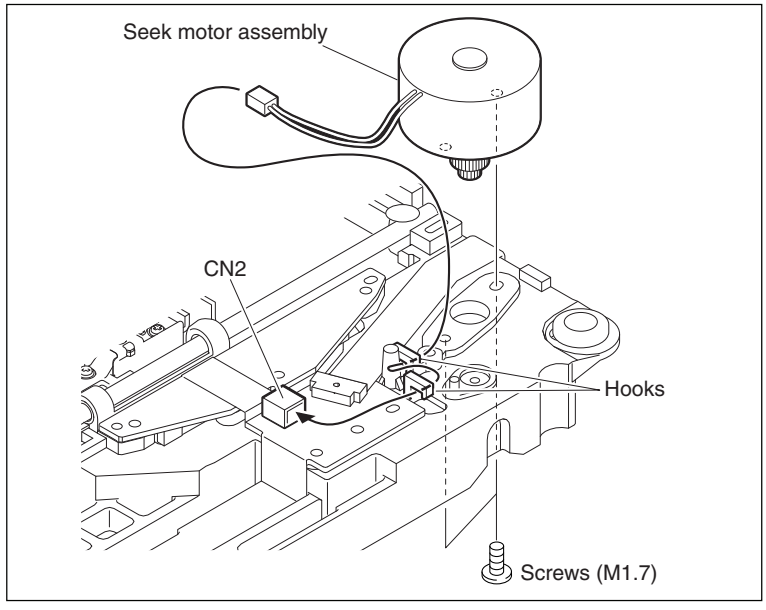
- The seek motor assembly requires periodic replacement. Refer to "6-1. Periodic Check/Replacement Parts List" for details.
- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.

1. Remove the outside panel assembly. (Refer to Section 1-7-1.)
2. Remove the laser caution sheet. (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet. (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly. (Refer to Section 1-7-6.)
5. Remove the loader assembly. (Refer to Section 7-1-1.)
6. Remove the drive sub assembly. (Refer to Section 7-1-2.)
7. Reverse the drive sub assembly.

   Note

   Do not to put the drive sub assembly reversed on anywhere. If it is put, this may cause damage to the spindle motor or the optical block assembly.

8. Remove the No.2 gear and the No.3 gear assembly. (Refer to Section 7-1-6.)
9. Disconnect the harness from the connector CN2.
10. Remove the two screws, and remove the seek motor assembly.



11. Secure a new seek motor assembly with two screws.

    Tightening torque:

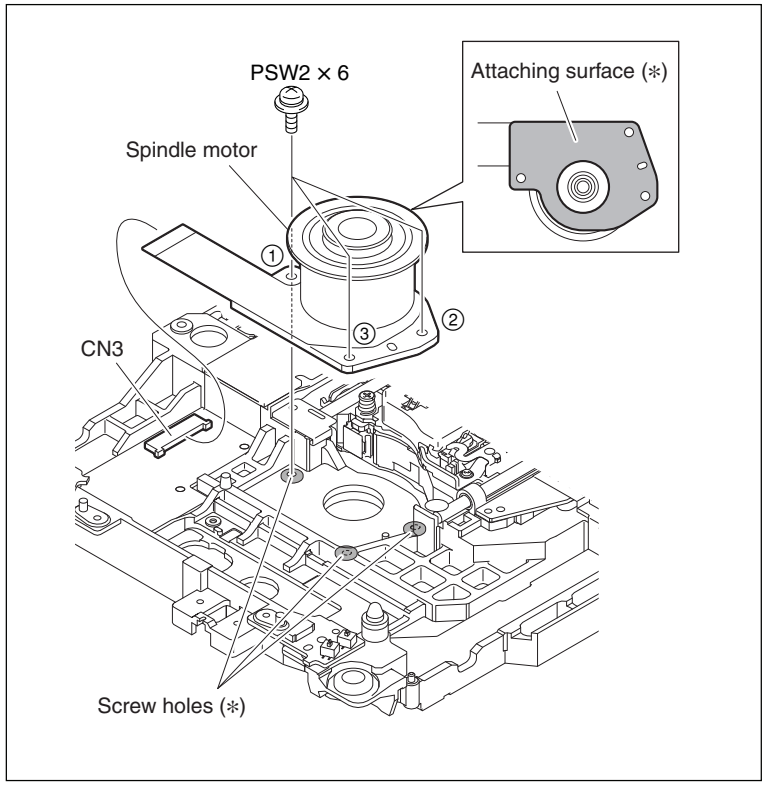
    $10 \times 10^{-2} \pm 0.01$ N•m (1.0 ± 0.1 kgf•cm)
12. Clamp the harness to the two hooks, and connect it to the connector CN2.
13. Reinstall the removed parts by reversing steps 1 to 8.

7-1-8. Replacing Spindle Motor

Notes

- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- Life of flexible card wire and flexible board will be significantly shortened if they are folded. Flexible board is easily cut. Be very careful not to fold them.

1. Remove the outside panel assembly. (Refer to Section 1-7-1.)
2. Remove the laser caution sheet. (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet. (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly. (Refer to Section 1-7-6.)
5. Remove the loader assembly. (Refer to Section 7-1-1.)
6. Disconnect the flexible card wire from the connector CN3.
7. Remove the three screws, and remove the spindle motor.

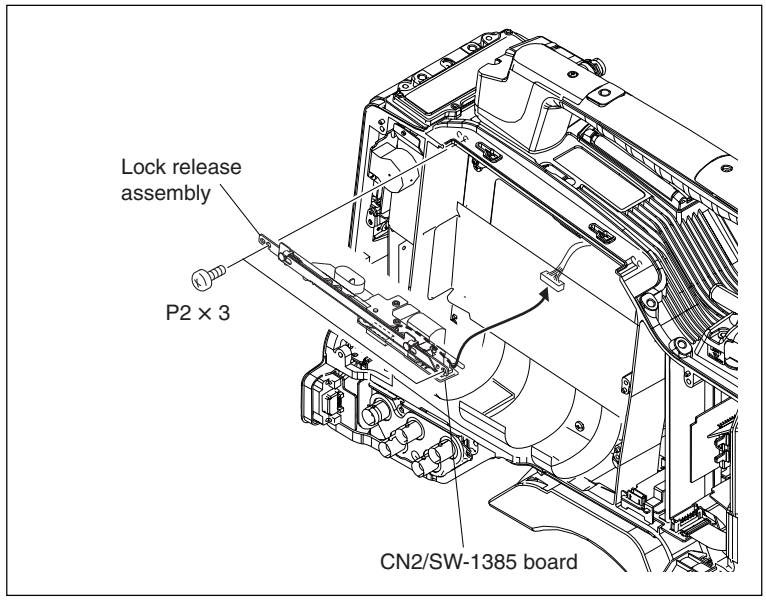


8. Clean the attaching surface (*) and the three screw holes (*) of a new spindle motor with a cleaning cloth with cleaning fluid soaked.
9. Install the spindle motor with three screws in the order of the numbers shown in the figure.
10. Connect the flexible card wire to the connector CN3.
11. Perform the skew adjustment. (Refer to Section 8.)
12. Reinstall the removed parts by reversing steps 1 to 5.

7-1-9. Removing/Reinstalling Lock Release Assembly

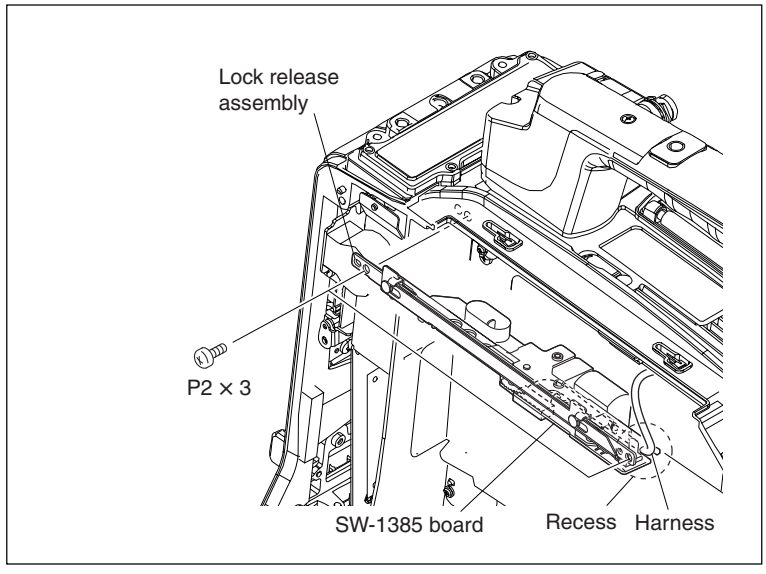
Removal

1. Remove the outside panel assembly.
   (Refer to Section 1-7-1.)
2. Remove the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet.
   (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly.
   (Refer to Section 1-7-6.)
5. Remove the loader assembly.
   (Refer to Section 7-1-1.)
6. Remove the drive sub assembly.
   (Refer to Section 7-1-2.)
7. Remove the two screws and remove the lock release assembly.
8. Disconnect the harness from the connector (CN2) on the SW-1385 board.



Reinstallation

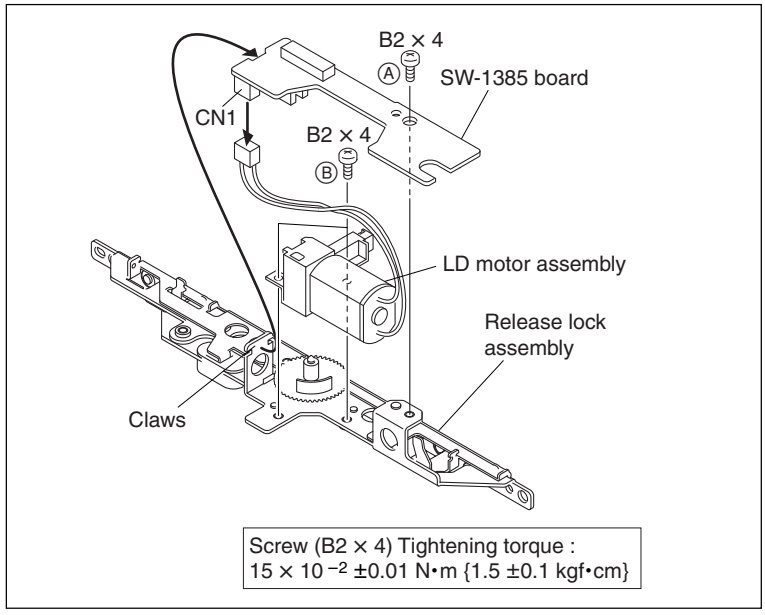
1. Connect the harness to the connector (CN2) on the SW-1385 board.
2. Install the lock release assembly with the two screws while hooking the slacked portion of the harness into the recess of the SW-1385 board.
3. Reinstall the removed parts by reversing steps 1 to 6.



7-1-10. Removing/Reinstalling LD Motor

Removal

1. Remove the outside panel assembly.
   (Refer to Section 1-7-1.)
2. Remove the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet.
   (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly.
   (Refer to Section 1-7-6.)
5. Remove the loader assembly.
   (Refer to Section 7-1-1.)
6. Remove the drive sub assembly.
   (Refer to Section 7-1-2.)
7. Remove the lock release assembly.
   (Refer to Section 7-1-9.)
8. Disconnect the connector (CN1) on the SW-1385 board.
9. Remove the screw Ⓐ and disengage the SW-1385 board from the claws of the release lock assembly base.
10. Remove the two screws Ⓑ and remove the LD motor sub assembly.

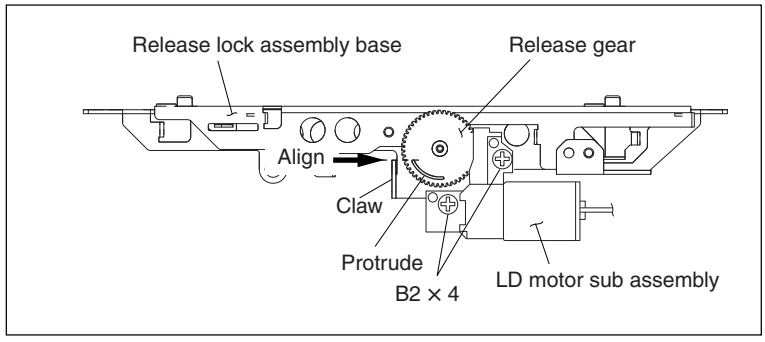


Reinstallation

1. Reinstall the removed parts by reversing steps 1 to 10.

   Note

   Align the protruded portion of the release gear with the claw on the release lock assembly base to install the LD motor sub assembly.



7-2. Removing/Reinstalling Mounted Circuit Board of the Optical Drive

7-2-1. SE-709 Board

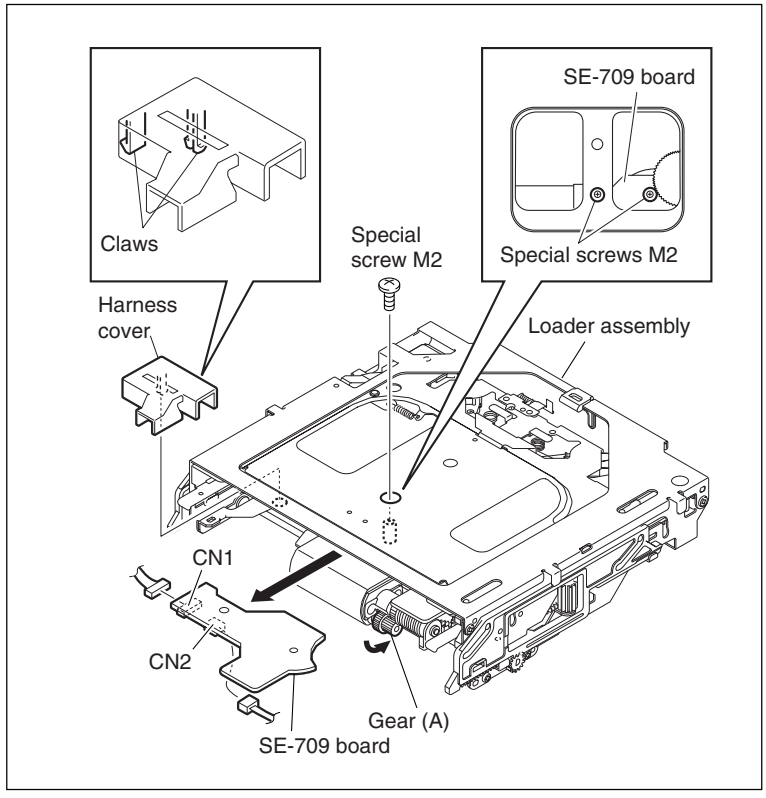
Removal

1. Remove the outside panel assembly.
   (Refer to Section 1-7-1.)
2. Remove the laser caution sheet.
   (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet.
   (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly.
   (Refer to Section 1-7-6.)
5. Remove the loader assembly.
   (Refer to Section 7-1-1.)
6. Disengage the two claws, and remove the harness cover.
7. Turn the gear (A) in the arrow direction to move the SE-709 board fixing screw to under the hole of the loader assembly.

   Note

   This step is not necessary when the cartridge has been ejected normally.

8. Remove the two screws, and remove the SE-709 board.
9. Disconnect the harnesses from the connectors CN1 and CN2.



Reinstallation

1. Reinstall the removed parts by reversing steps 1 to 9 of removal.

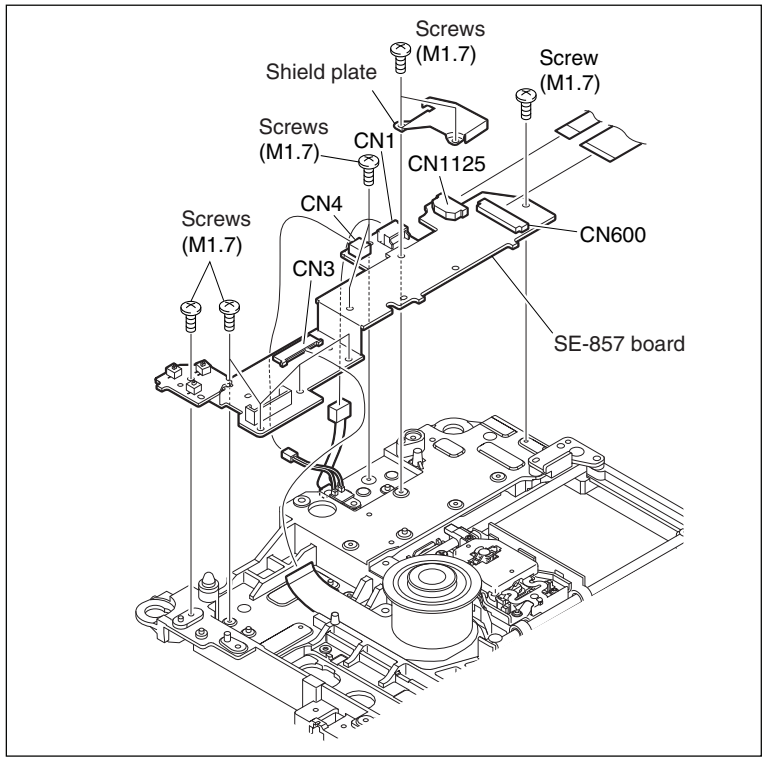
7-2-2. SE-857 Board

Notes

- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- Life of flexible card wire and flexible board will be significantly shortened if they are folded. Flexible board is easily cut. Be very careful not to fold them.

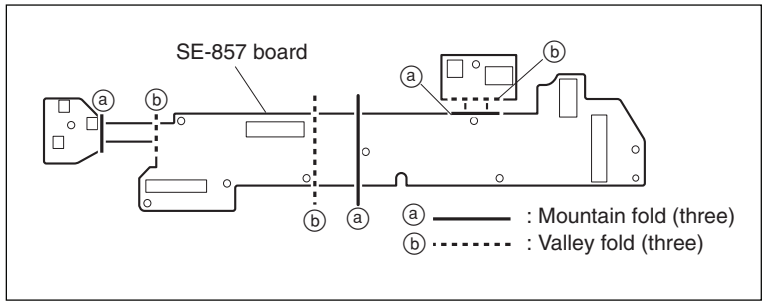
Removal

1. Remove the outside panel assembly. (Refer to Section 1-7-1.)
2. Remove the laser caution sheet. (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet. (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly. (Refer to Section 1-7-6.)
5. Remove the loader assembly. (Refer to Section 7-1-1.)
6. Disconnect the flexible card wires from the connectors CN3, CN600, and CN1125.
7. Remove the ten screws, and remove the SE-857 board and the shield plate.
8. Disconnect the dew sensor harness from the connector CN4.
9. Disconnect the fan motor from the connector CN1.



Reinstallation

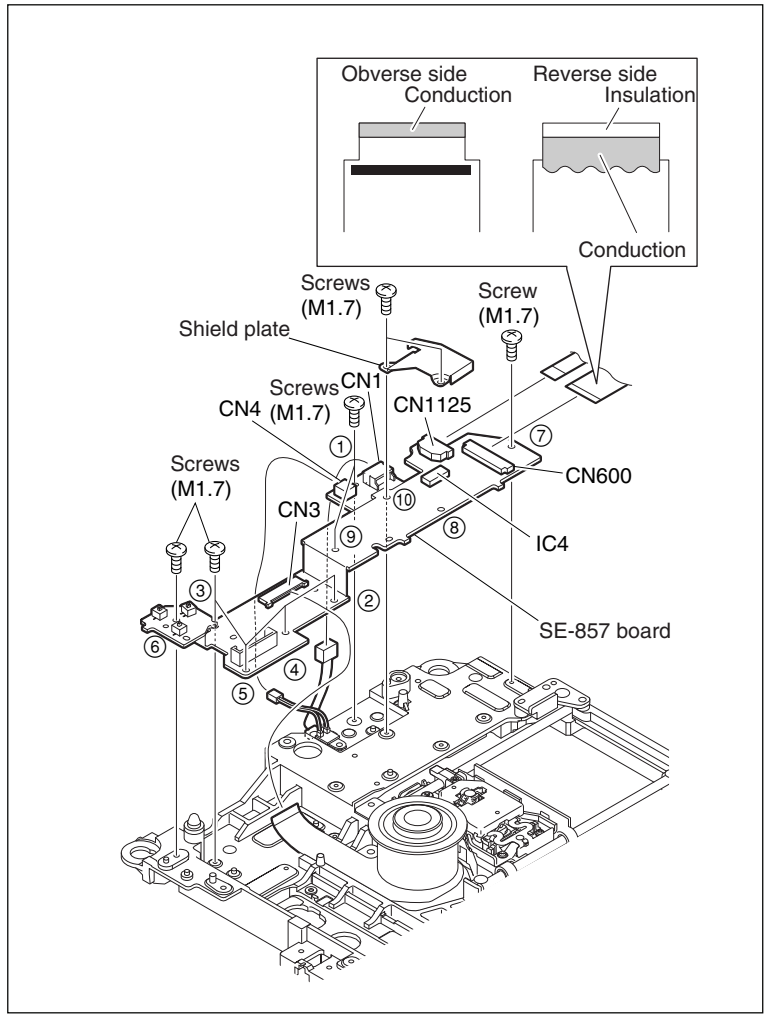
1. When installing a new SE-857 board, fold it several times as shown in the figure to maintain the folded shape.



2. Connect the fan motor harness to the connector CN1.
3. Connect the dew sensor harness to the connector CN4.
4. Install the SE-857 board and the shield plate with ten screws in the order of the numbers shown in the figure.
   Tightening torque:
   $10 \times 10^{-2} \pm 0.01$ N•m (1.0 ±0.1 kgf•cm)
5. Connect the flexible card wires to the connectors CN3, CN600, and CN1125.
   Note
   The flexible card wire connected to CN600 has a conductive area on both sides, and the tip on the reverse side is insulated. Insert the flexible card wire into the connector as far as it will go, and then lock it.

6. To replace the SE-857 board, remove IC4 from the old SE-857 board and mount it on a new SE-857 board.
   Note
   IC4 retains data including adjustment data and hours meter data.

7. Reinstall the removed parts by reversing steps 1 to 5 of removal.
8. Take service action after replacing or repairing the SE-857 board.
   (Refer to Section 7-8-8.)



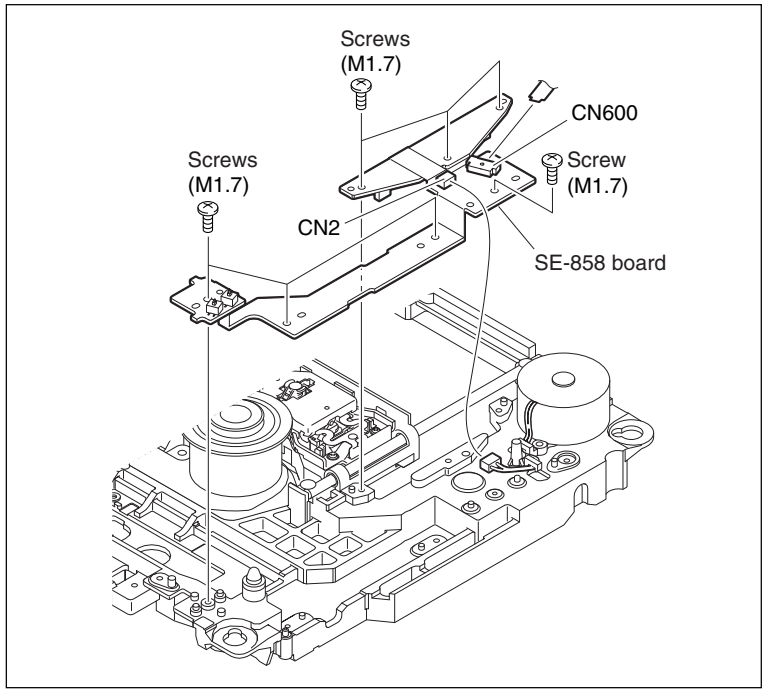
7-2-3. SE-858 Board

Notes

- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.
- Life of flexible card wire and flexible board will be significantly shortened if they are folded. Flexible board is easily cut. Be very careful not to fold them.

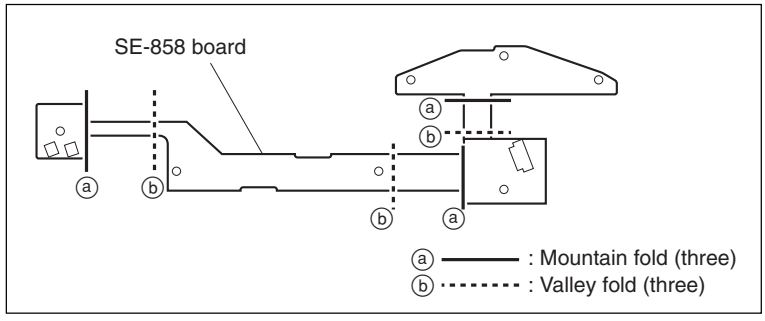
Removal

1. Remove the outside panel assembly. (Refer to Section 1-7-1.)
2. Remove the laser caution sheet. (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet. (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly. (Refer to Section 1-7-6.)
5. Remove the loader assembly. (Refer to Section 7-1-1.)
6. Disconnect the harness from the connector CN2.
7. Disconnect the flexible card wire from the connector CN600.
8. Remove the seven screws, and remove the SE-858 board.



Reinstallation

1. When installing a new SE-858 board, fold it several times as shown in the figure to maintain the folded shape.

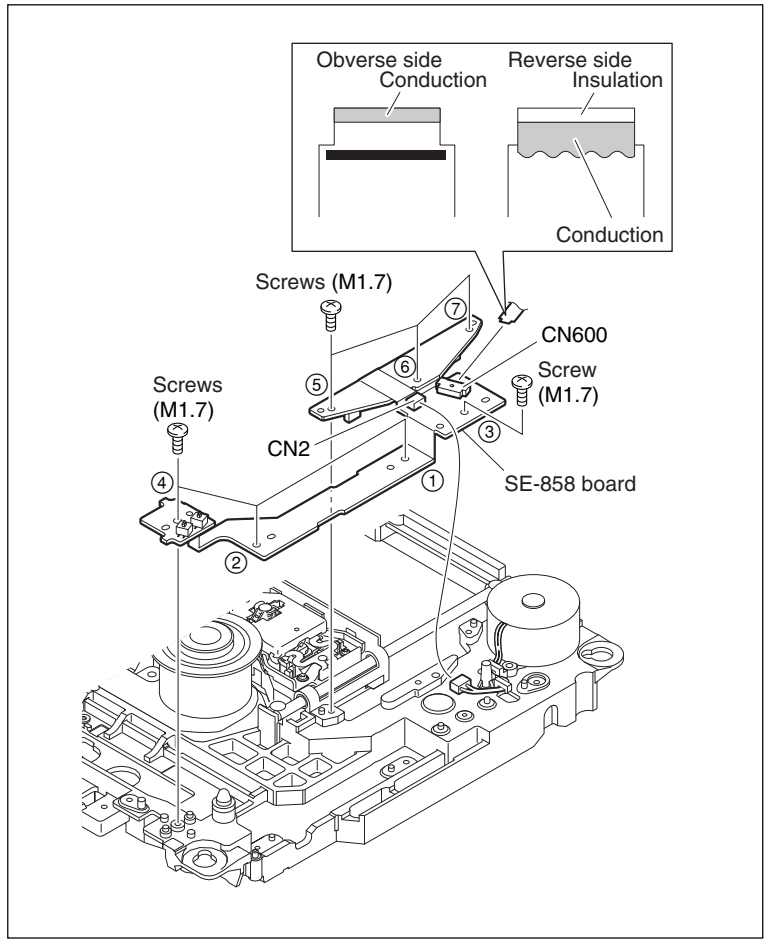


2. Install the SE-858 board with seven screws in the order of the numbers shown in the figure.
   Tightening torque:
   $10 \times 10^{-2} \pm 0.01$ N•m (1.0 ±0.1 kgf•cm)
3. Connect the flexible card wire to the connector CN600.

   Note

   The flexible card wire connected to CN600 has a conductive area on both sides, and the tip on the reverse side is insulated. Insert the flexible card wire into the connector as far as it will go, and then lock it.

4. Connect the harness to the connector CN2.
5. Reinstall the removed parts by reversing steps 1 to 5 of removal.

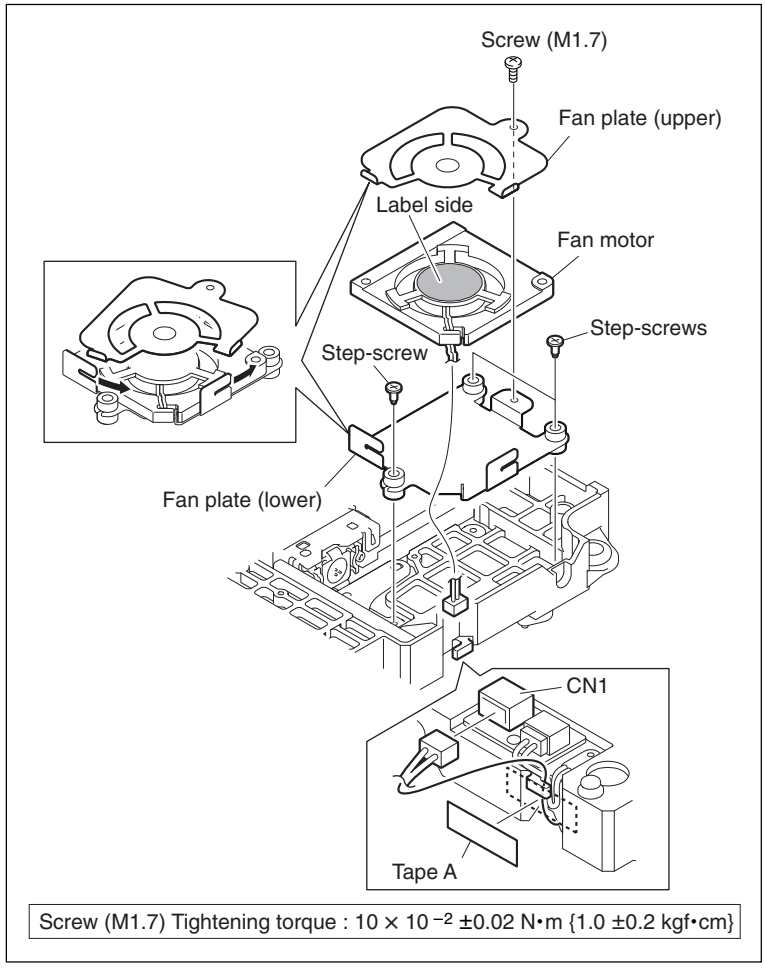


7-3. Replacing Fan Motor (Drive)

Notes

- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have intense magnetic circuits. Keep magnetic substance away from these parts. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If the magnetic substance is moved close to these parts, their characteristics may be changed.

1. Remove the outside panel assembly. (Refer to Section 1-7-1.)
2. Remove the laser caution sheet. (Refer to Section 1-6-2 step 2.)
3. Remove the corner block with adhesive sheet and cover sheet. (Refer to Section 7-1-1 step 3.)
4. Remove the SW guard assembly. (Refer to Section 1-7-6.)
5. Remove the loader assembly. (Refer to Section 7-1-1.)
6. Remove the drive sub assembly. (Refer to Section 7-1-2.)
7. Remove the tape A and disconnect harness from the connector CN1.
8. Remove the three step-screws, and remove the fan plate (lower).
9. Remove the screw, and remove the fan plate (upper) while rotating it in the arrow direction.
10. Remove the fan motor.



Screw (M1.7) Tightening torque : 10×10^{-2} ±0.02 N•m {1.0 ±0.2 kgf•cm}

11. Place a new fan motor with its label side up oriented as shown in the figure.
12. Reinstall the removed parts by reversing steps 1 to 9 of removal.

Note

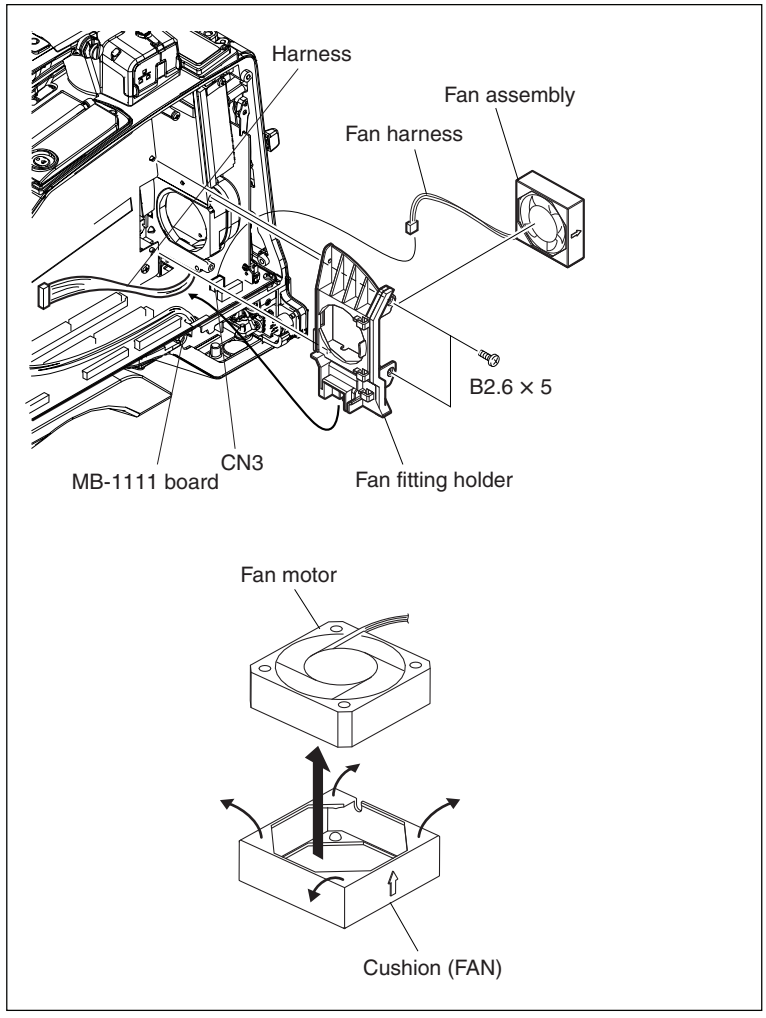
Arrange the harness as shown in the figure.

7-4. Replacing Fan Motor (Rear)

1. Remove the inside panel.
   (Refer to Section 1-7-3.)
2. Remove the DCP-44 board assembly.
   (Refer to Section 7-7-4.)
3. Remove the DVP-45 board assembly.
   (Refer to Section 7-7-6.)
4. Disconnect the harness from the connector (CN103) on the MB-1111 board.
5. Remove the two screws, and disconnect the harness through the bottom hole of the fan fitting holder.
6. Remove the fan assembly from the fan fitting holder.
7. Tilt the four corners of the cushion outward to remove the fan motor.

   Note

   The cushion (FAN) is made of rubber and soft enough to remove the fan motor easily.



8. Attach the fan cushion to the new fan motor.

   Note

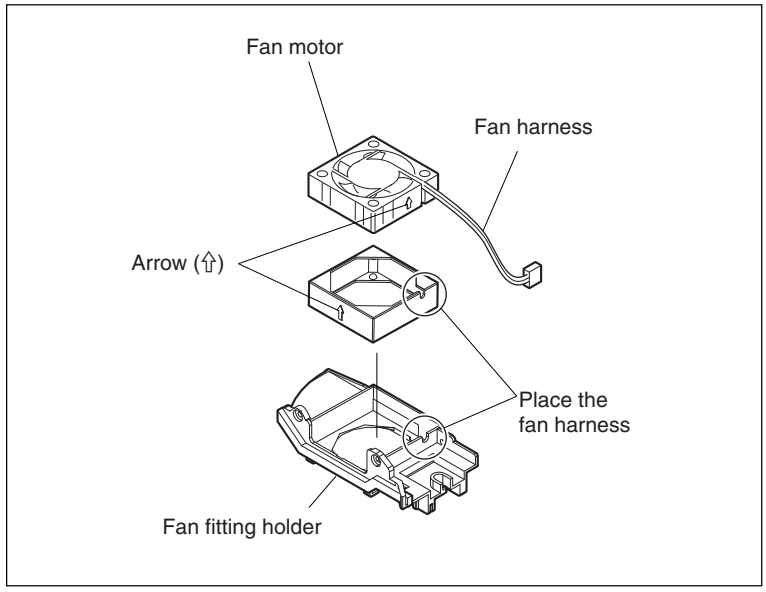
   The arrow (⇧) on the fan motor must be pointing in the same direction as that on the cushion (FAN).

9. Insert the fan assembly into the fan fitting holder until it stops.

   Notes

   - Be sure that the arrow (⇧) on the cushion (FAN) points toward the rear panel, and that the fan harness comes to the bottom.
   - When reinstalling, be sure that the cushion (FAN) is not flipped over or sagged.

10. Reinstall the removed parts by reversing steps 1 to 5 of removal.



7-5. Removing/Reinstalling CCD Unit

• Tool: L-wrench (across flat: 1.5 mm)
L-wrench (across flat: 1.5 mm)

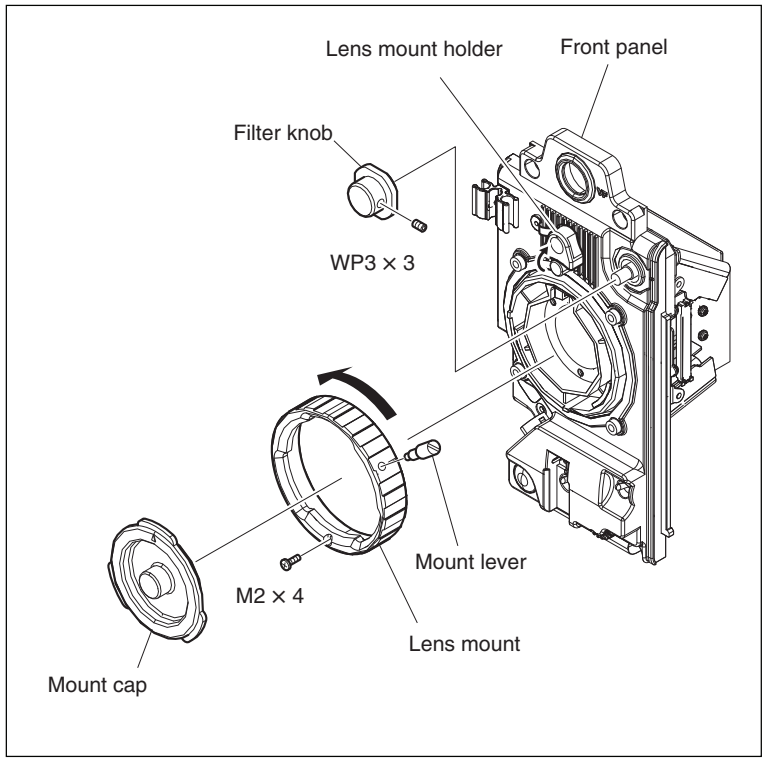
7-5-1. Removing CCD Unit

1. Remove the outside panel assembly. (Refer to Section 1-7-1.)
2. Remove the inside panel assembly. (Refer to Section 1-7-3.)
3. Remove the front panel. (Refer to Section 1-7-5.)
4. Loosen the filter knob setscrew, and remove the filter knob.
5. Move the position of the lens mount holder.
6. Turn the lens mount counterclockwise, and remove the mount cap.

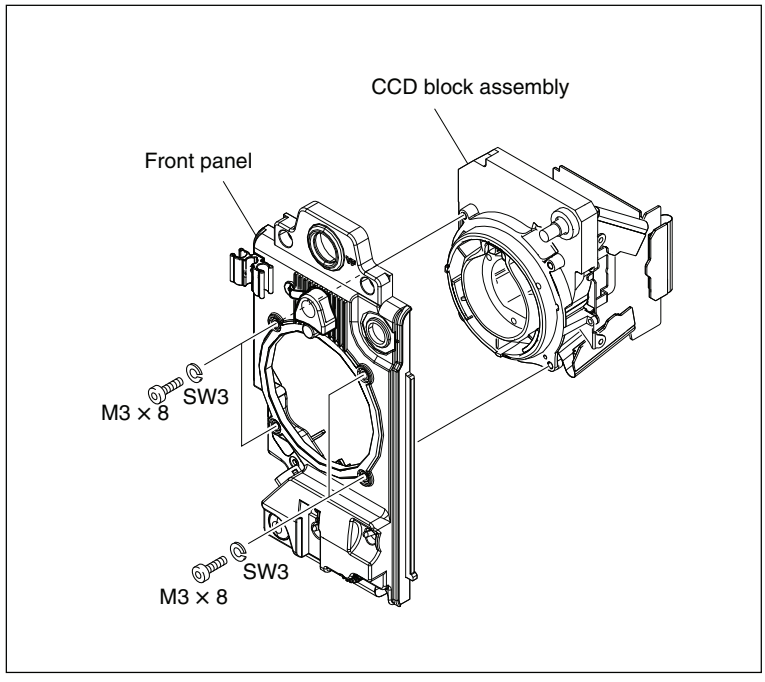
Note

Do not touch the filter while the mount cap is removed.

7. Remove the screw (M2 × 4) and mount lever.
8. Turn the lens mount counterclockwise to remove.



9. Remove the four bolts (M3 × 8) and four spring washers, and remove the CCD unit from the front panel.



7-5-2. Reinstalling CCD Unit

1. Attach the new shield finger LM to the front panel.

   Notes

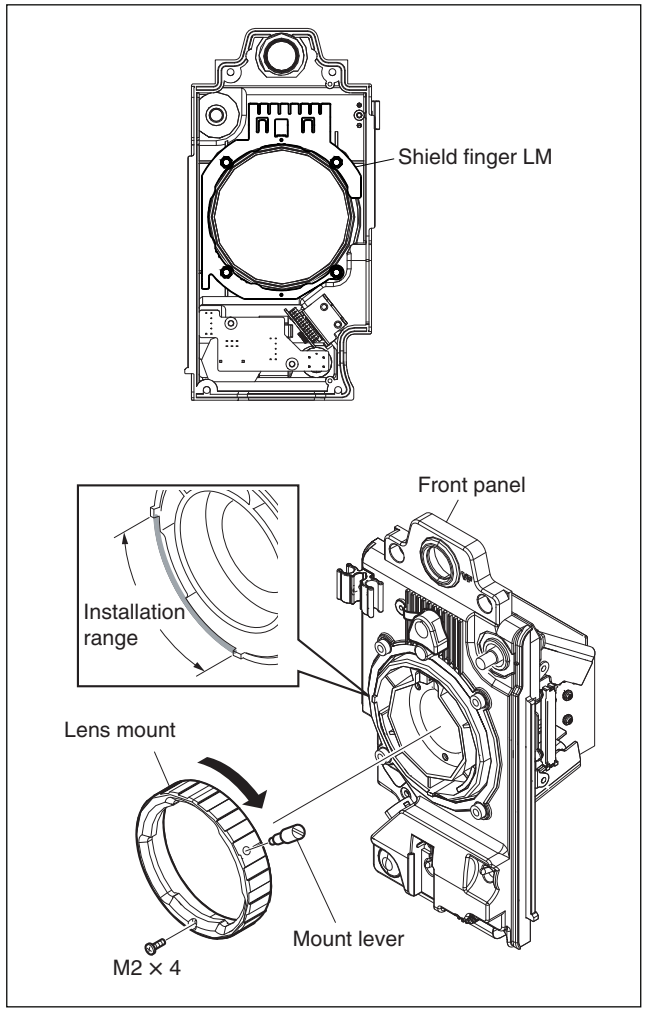
   • Do not directly touch shield finger LM.
   Be careful not to get hurt with the edges when handling them.
   • Confirm that shield finger LM is in position.

2. Install the CCD unit to the front panel with four screws and four spring washers.

   Note

   When installing the CCD block, be careful so that the optical axis does not tilt (misaligned) due to a play. If a picture on the monitor screen tilts, loosen the screws of the CCD block and adjust the installation so that the picture becomes horizontal.

3. Fully turn the lens mount clockwise to install.
4. Turn the lens mount counterclockwise until the screw (M2 × 4) hole comes in the range shown in the figure.
5. Attach the mount lever and the screw (M2 × 4) .



6. Attach the filter knob with the setscrew, while adjusting the knob using the following steps.
   (1) Shift the lens mount holder to the position shown in the figure.
   (2) Move the lever in the arrow direction and remove the mount cap.

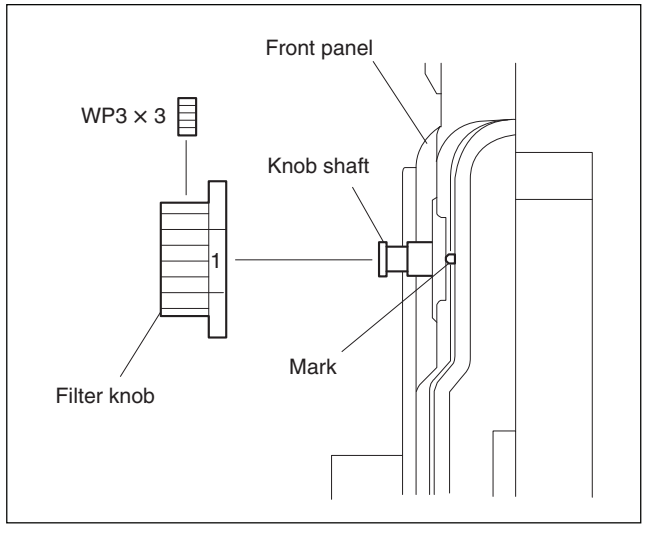
   Note

   Do not touch the filter while the mount cap is removed.

7. Attach the front panel assembly. (Refer to Section 1-7-5.)
8. Attach the inside panel. (Refer to Section 1-7-3.)
9. Attach the outside panel. (Refer to Section 1-7-1.)

   Note

   When a new CCD unit is installed, camera adjustment is required. (Refer to Section 7-6.)



7-6. Service Action After Replacing the CCD Unit

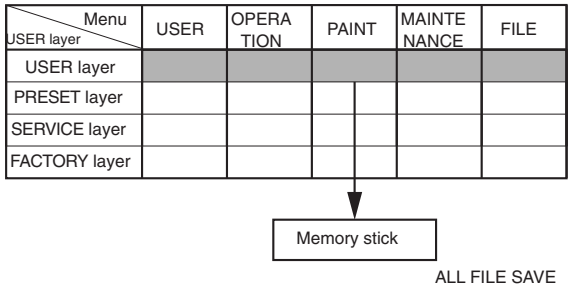
This section describes the required actions for replacing the CCD unit.

Note

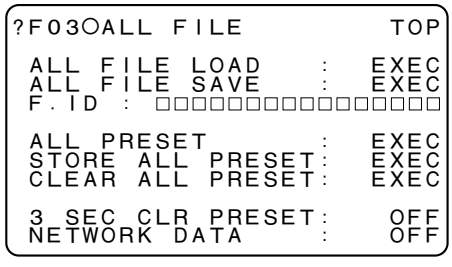
Save the settings of the menu contents in the Memory Stick before performing the actions after replacement.

Saving menu settings

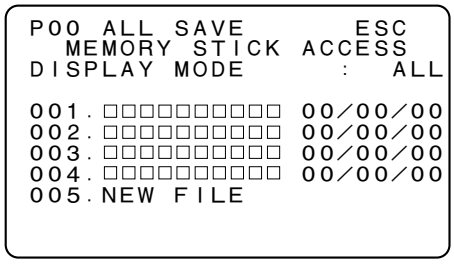
Save the menu settings in a Memory Stick



1. Insert a memory stick.
2. Set the MENU ON/OFF switch to the ON position.
3. Let the ALL FILE page of the FILE menu appear on the screen and press the MENU knob.


?F03○ALL FILE TOP
ALL FILE LOAD : EXEC
ALL FILE SAVE : EXEC
F.ID : □□□□□□□□□□□□□□□□
ALL PRESET : EXEC
STORE ALL PRESET : EXEC
CLEAR ALL PRESET : EXEC
3 SEC CLR PRESET : OFF
NETWORK DATA : OFF

4. Select F.ID and set the file ID.
5. Select ALL FILE SAVE and execute it by pressing the MENU knob.
6. When the cursor is moved to the file selection display, select the destination file where the file is going to be saved and press the MENU knob. (When saving a new file, select NEW FILE.)



7. Confirm that the screen returns to the ALL FILE display and the message “COMPLETE!” appears indicating that the saving is complete.

Service Action after replacement

1. Reset them using the SERVICE menu.
   Refer to “4-9. SERVICE Menu” for the details on SERVICE menus.

(1) Open the switch cover with the power of the main unit turned on, and turn on the MENU ON/OFF switch. The menu appears on the viewfinder screen regardless of the ON/OFF state of the DISPLAY switch on the viewfinder.
(2) Select “SERVICE” from the TOP menu, and press the MENU knob.

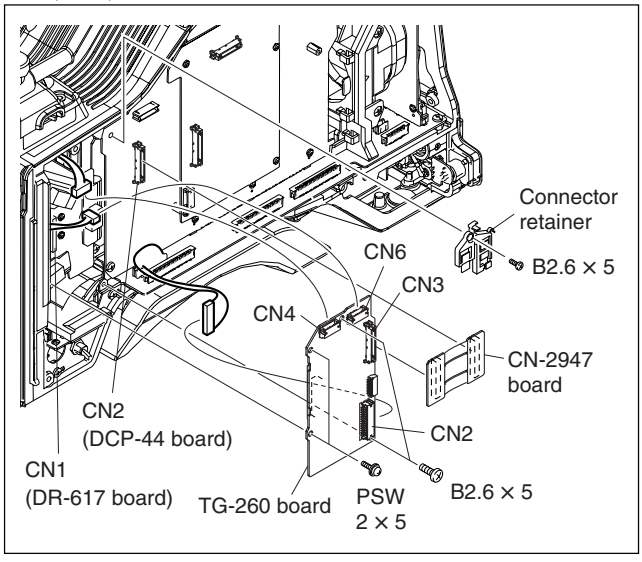
2. Perform the following adjustments.
   - VCO CONT frequency adjustment
   - VA gain adjustment
   - Black shading adjustment
   - White shading adjustment
   - Black set adjustment
     (After BLACK BALANCE is displayed, press and hold the AUTO W/B BAL switch toward BLACK until BLACK SET is displayed again.)
   - Flare adjustment
   - Perform RPN ALL PRESET.
   - Perform AUTO CONCEAL.
   - Perform AUTO CONCEAL2.

3. Restore the DIP switch on the AT-177 board to exit the service mode. (Refer to section 4-9.)
4. Turn on the power of the camera.
5. Perform ALL FILE LOAD and load the saved ALL FILE.

7-7. Removing/Installing Boards

7-7-1. CN-2947 Board and TG-260 Board

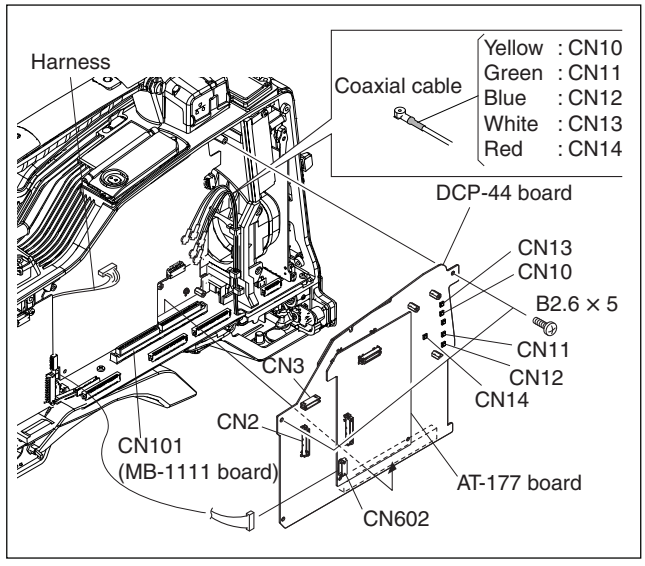
1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the screw (B2.6 × 5) , and remove the connector retainer.
3. Disconnect the CN-2947 board from the connector (CN3) on the TG-260 board and the connector (CN2) on the DCP-44 board.
4. Disconnect the harness from the connectors (CN2, CN4, CN6) on the TG-260 board.
5. Remove the four screws (B2.6 × 5) .
6. Disconnect the TG-260 board from the connector (CN1) on the DR-617 board.



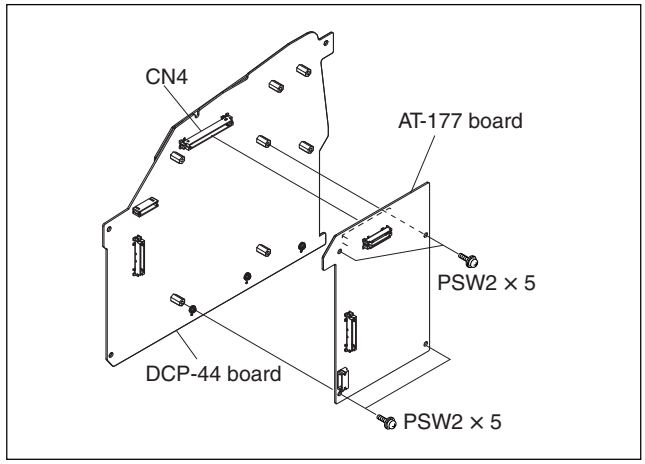
7. Reinstall the removed parts by reversing steps 1 to 6 of removal.

7-7-2. AT-177 Board and DCP-44 Board

1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the CN-2947 board. (Refer to Section 7-7-1.)
3. Disconnect the harness form the connector (CN602) on the AT-177 board.
4. Disconnect the harness form the connector (CN3) on the DCP-44 board.
5. Disconnect the coaxial cables form the five coaxial connectors (CN10, CN11, CN12, CN13, and CN14) on the DCP-44 board.
6. Remove the two screws (B2.6 × 5) .
7. Disconnect the DCP-44 board (The AT-177 board is included.) from the connector (CN101) on the MB-1111 board.



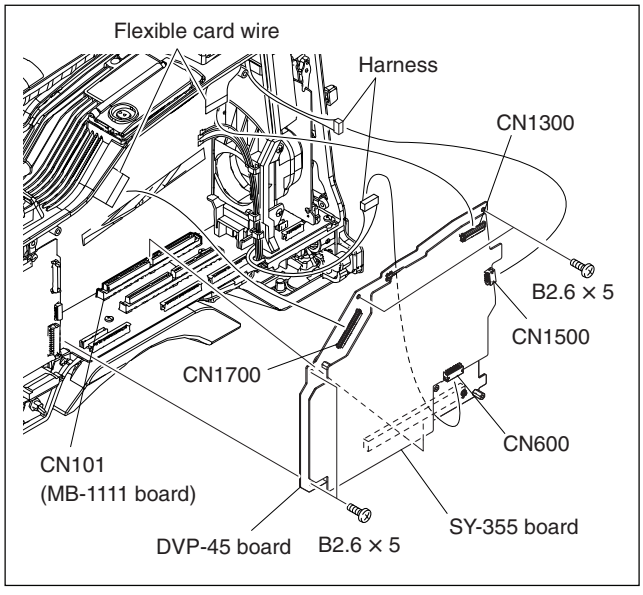
8. Remove the four screws (PSW2 × 5) and disconnect the AT-177 board from the connector (CN4) on the DCP-44 board.



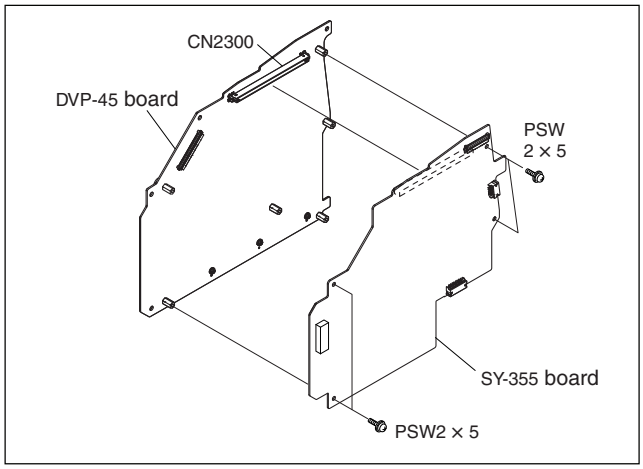
9. Reinstall the removed parts by reversing steps 1 to 8 of removal.

7-7-3. DVP-45 Board and SY-355 Board

1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the CN-2947 board. (Refer to Section 7-7-1.)
3. Remove the DCP-44 board. (Refer to Section 7-7-2.)
4. Disconnect the harnesses from the two connectors (CN600, CN1500) on the SY-355 board.
5. Disconnect the flexible card wire form the connector (CN1300) on the SY-355 board.
6. Disconnect the flexible card wire form the connector (CN1700) on the DVP-45 board.
7. Remove the four screws (B2.6 × 5) .
8. Disconnect the DVP-45 board (The SY-355 board is included.) from the connector (CN101) on the MB-1111 board.



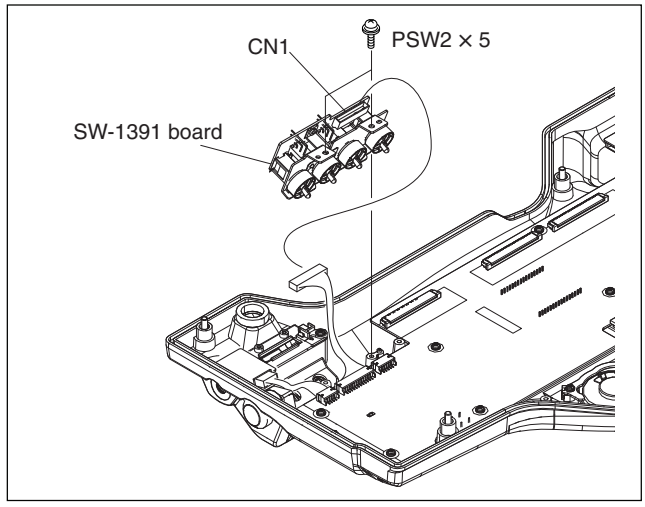
9. Remove the four screws (PSW2 × 5) and disconnect the SY-355 board from the connector (CN2300) on the DVP-45 board.



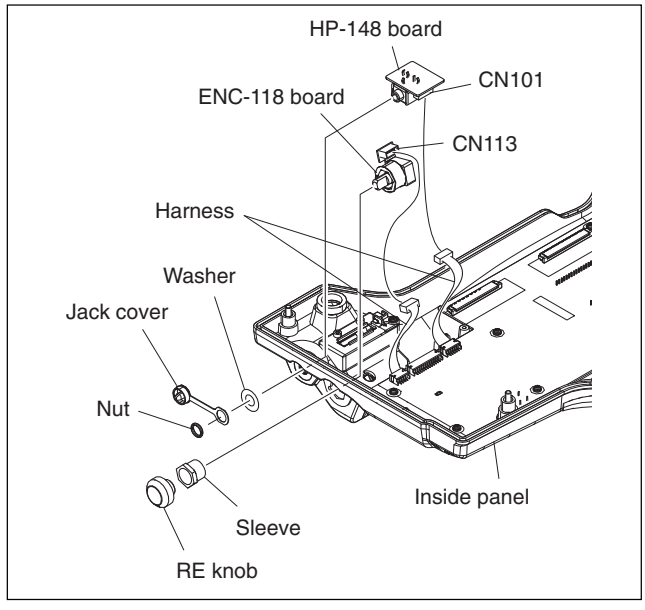
10. Reinstall the removed parts by reversing steps 1 to 9 of removal.

7-7-4. ENC-118 Board, HP-148 Board and SW-1391 Board

1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the two screws (PSW2 × 5) .
3. Disconnect the harness from the connector (CN1) , and remove the SW-1391 board.



4. Remove the RE knob and sleeve.
5. Disconnect the harness form the connector (CN113) , and remove the ENC-118 board.
6. Open the jack cover and remove the fixing nut.
7. Disconnect the harness from the connector (CN101) , and remove the HP-148 board.



8. Reinstall the removed parts by reversing steps 1 to 7 of removal.

7-7-5. FP-157 Board

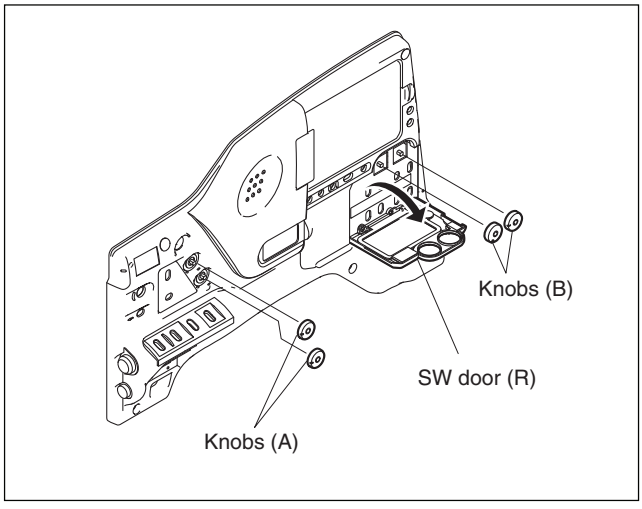
Note on removing FP-157 board:

This unit is always energized to retain data, even while the POWER switch is off. The data is also retained by the lithium battery on the FP-157 board. For this reason, if the board is repaired with power supplied, ICs on the board may be broken. Be sure to remove the lithium battery before removing the FP-157 board.

Note

Removing the lithium battery with a screwdriver or a similar tool may cause short-circuiting. Remove the battery with a bamboo stick or a similar insulator.

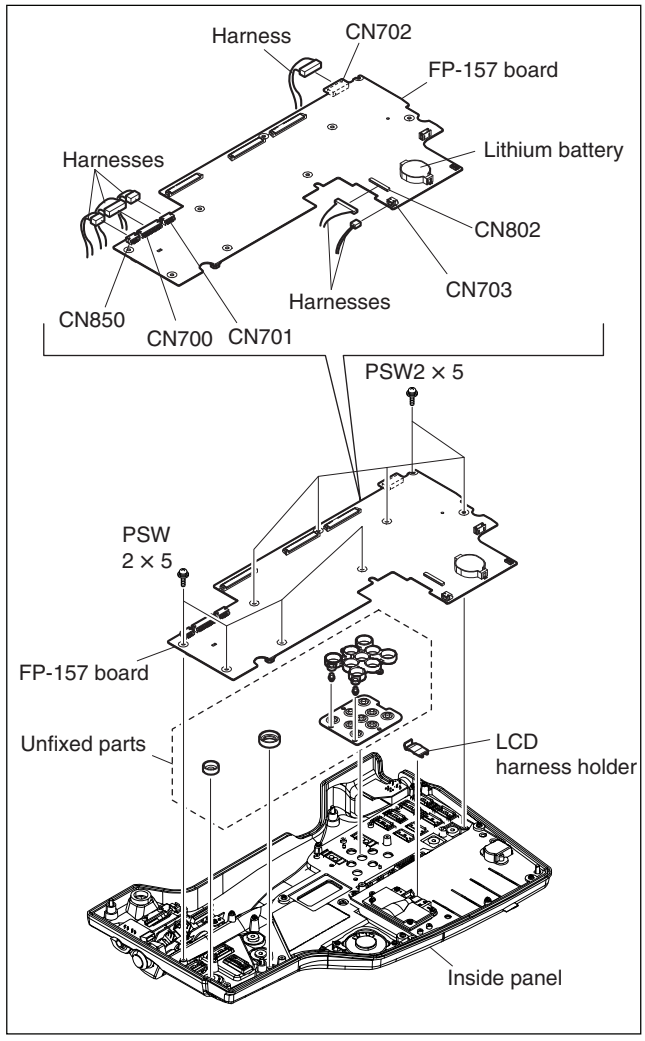
1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the knobs A (two pieces) .
3. Open the switch door (R) , and remove the knobs B (two pieces) .



4. Remove the LCD harness holder.
5. Disconnect the harnesses from the six connectors (CN700, CN701, CN702, CN703, CN802, CN850) on the FP-157 board.
6. Remove the nine screws (PSW2 × 5) , and remove the FP-157 board.

   Note

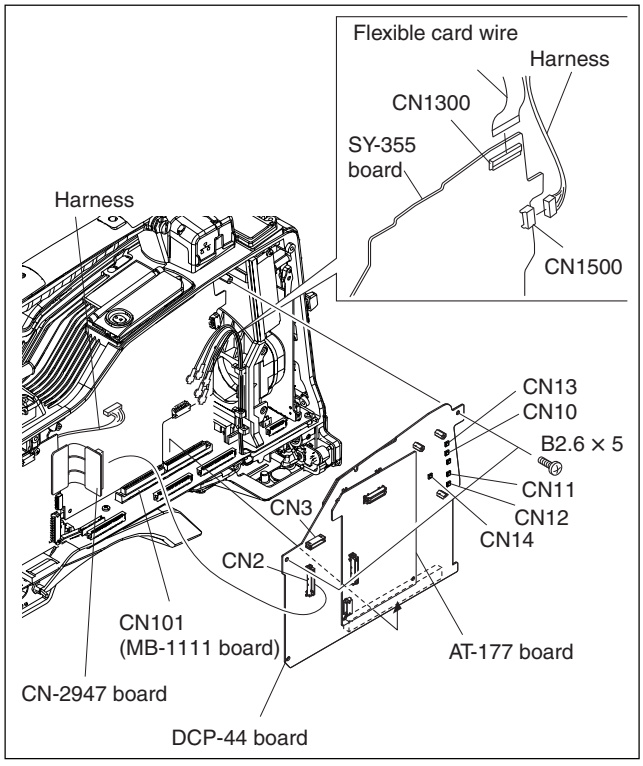
   After removing the FP-157 board, be careful not to drop the unfixed parts.



7. Reinstall the removed parts by reversing steps 1 to 6 of removal.

7-7-6. CN-2946 Board and CN-3026 Board

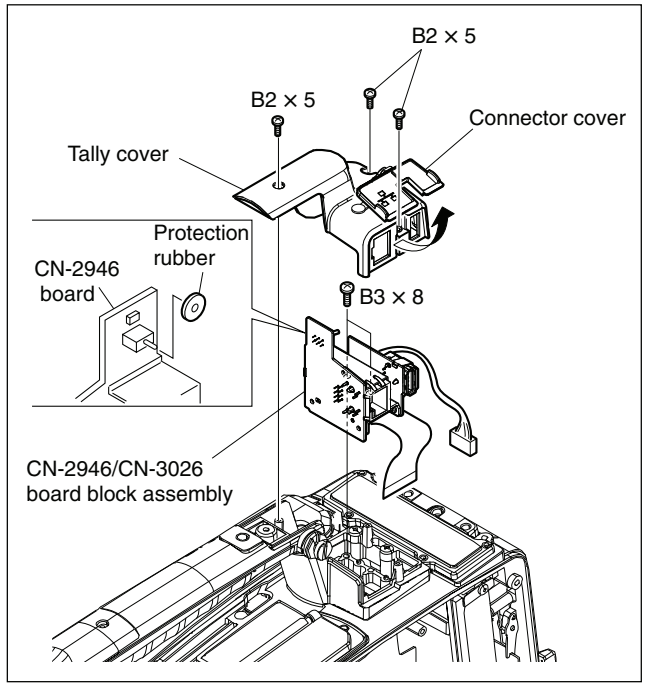
1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the DCP-44 board. (Refer to Section 7-7-2.)
3. Disconnect the flexible card wire from the connector (CN1300) on the SY-355 board.
4. Disconnect the harness from the connector (CN1500) on the SY-355 board.



5. Open the connector cover.
6. Remove the three screws (B2 × 5) , and remove the tally cover.
7. Remove the two screws (B3 × 8) , and remove the CN-2946/CN-3026 board block assembly.
8. Disconnect the flexible card wire from the connector (CN1) on the CN-3026 board.
9. Remove the two screws (PSW2 × 5) .

Note

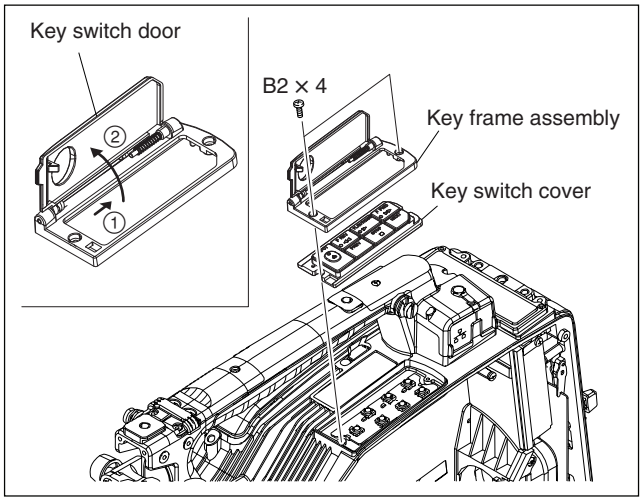
Be careful not to lose the drop protection on the CN-2946 board, since it is not fixed.



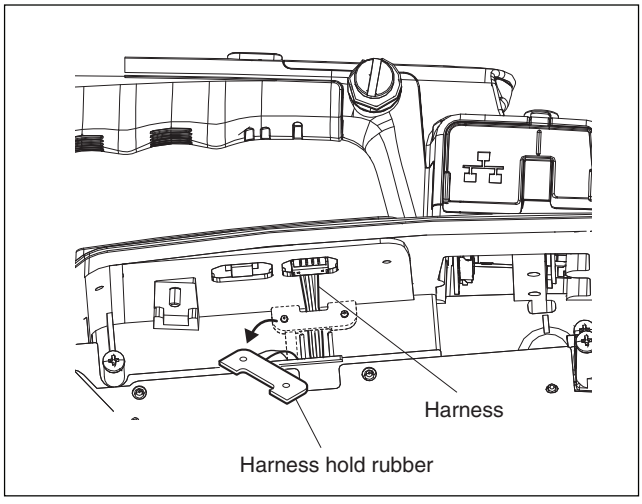
10. Reinstall the removed parts by reversing steps 1 to 9 of removal.

7-7-7. KY-623 Board

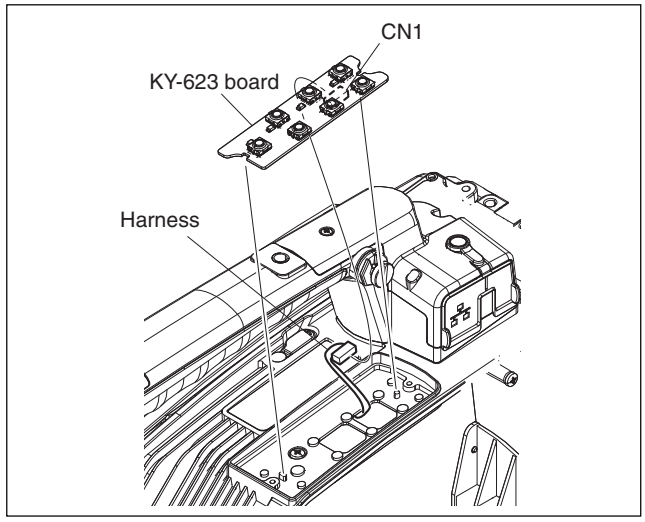
1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the DCP-44 board. (Refer to Section 7-7-2.)
3. Remove the DVP-45 board. (Refer to Section 7-7-3.)
4. Open the key switch door.
5. Remove the two screws, key frame assembly and key switch cover.



6. Remove the harness holder rubber to release the harness.



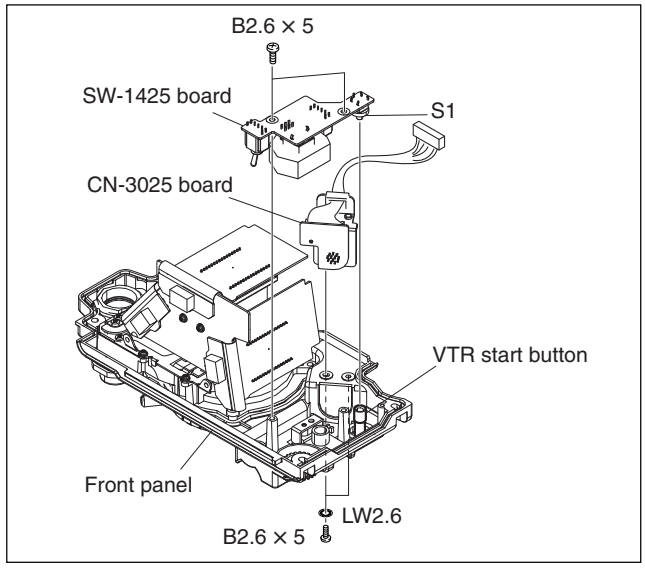
7. Disconnect the harness from the connector (CN1) , and remove the KY-623 board.



8. Reinstall the removed parts by reversing steps 1 to 7 of removal.

7-7-8. CN-3025 Board and SW-1425 Board

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the front panel. (Refer to Section 7-7-4.)
4. Remove the two screws (B2.6 × 5) , remove the SW-1425 board.
5. Remove the two screws (B2.6 × 5) , remove the CN-3025 board.



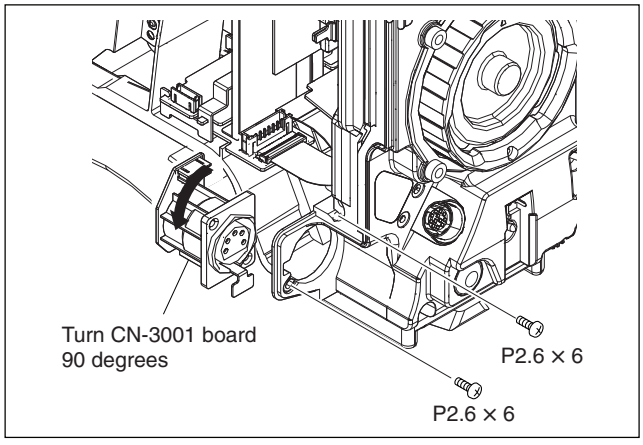
6. Reinstall the removed parts by reversing steps 1 to 5 of removal.

Note

Align the position of the switch (S1) on the SW-1425 board with the position of the VTR start button.

7-7-9. CN-3001 Board

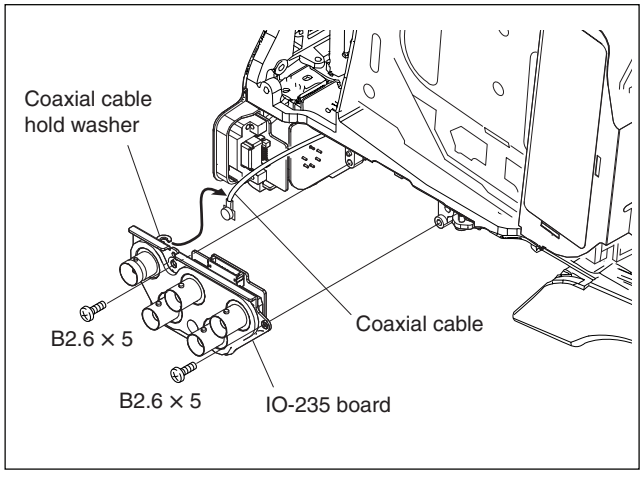
1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the two screws.
3. Disconnect the harness from the connector (CN2) , and remove the CN-3001 board by turning it in the direction of the arrow.



4. Reinstall the removed parts by reversing steps 1 to 3 of removal.

7-7-10. IO-235 Board

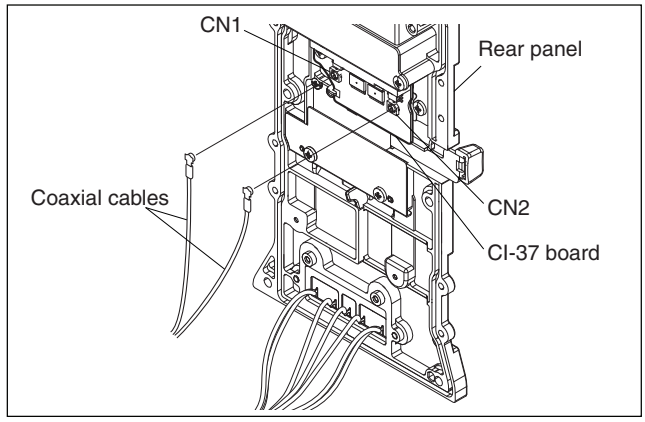
1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Remove the two screws.
5. Remove the coaxial cable from the coaxial connector and coaxial cable hold washer.
6. Disconnect the harness from the connector (CN1) , and remove the IO-235 board.



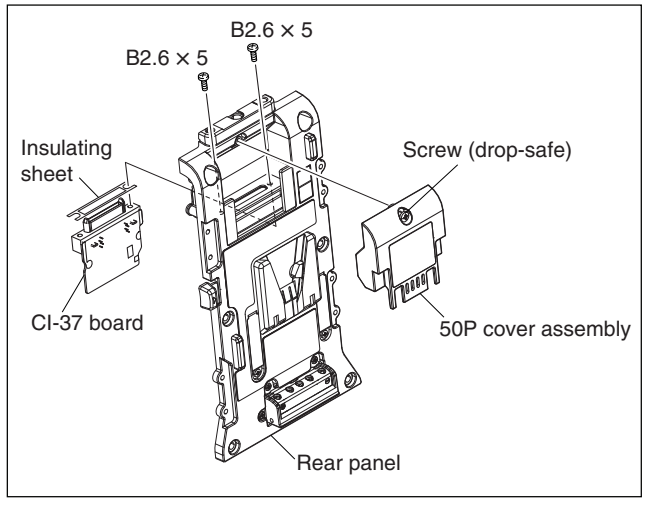
7. Reinstall the removed parts by reversing steps 1 to 6 of removal.

7-7-11. CI-37 Board

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Remove the connector panel. (Refer to Section 1-7-8.)
5. Remove the rear panel. (Refer to Section 1-7-9.)
6. Disconnect the two coaxial cables from connectors (CN1, CN2) on the CI-37 board.



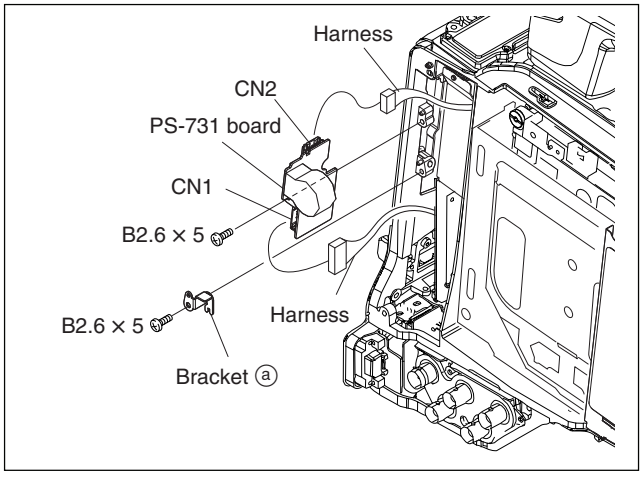
7. Loosen the screw, and remove the 50P cover assembly.
8. Remove the two screws, and remove the CI-37 board.



9. Reinstall the removed parts by reversing steps 1 to 8 of removal.

7-7-12. PS-731 Board

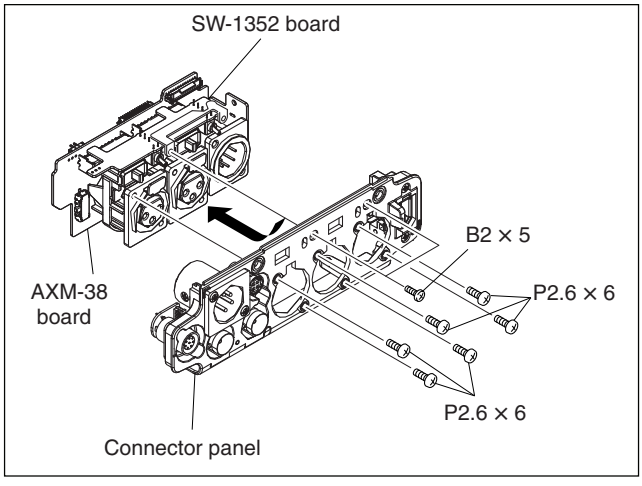
1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Disconnect the harness from the connector (CN1) on the PS-731 board.
3. Remove the screw, and remove the bracket ⓐ .
4. Remove the screw, and disconnect the harness from the connector (CN2) , then remove the PS-731 board.



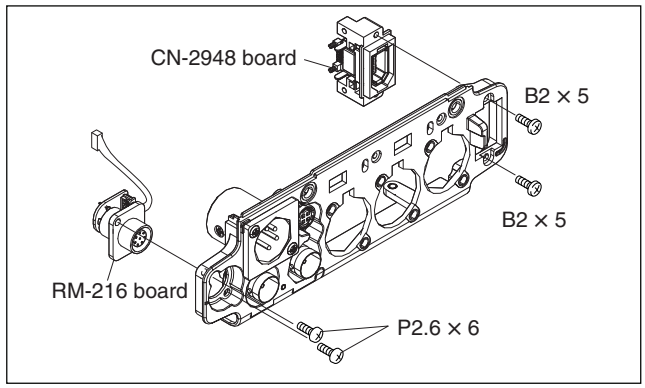
5. Reinstall the removed parts by reversing steps 1 to 4 of removal.

7-7-13. AXM-38 Board, CN-2948 Board, SW-1352 Board and RM-216 Board

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Remove the connector panel. (Refer to Section 1-7-8.)
5. Remove the two screws (B2 × 5) and six screws (P2.6 × 6) .
6. Remove the AXM-38 board and SW-1352 board in the direction of arrow.



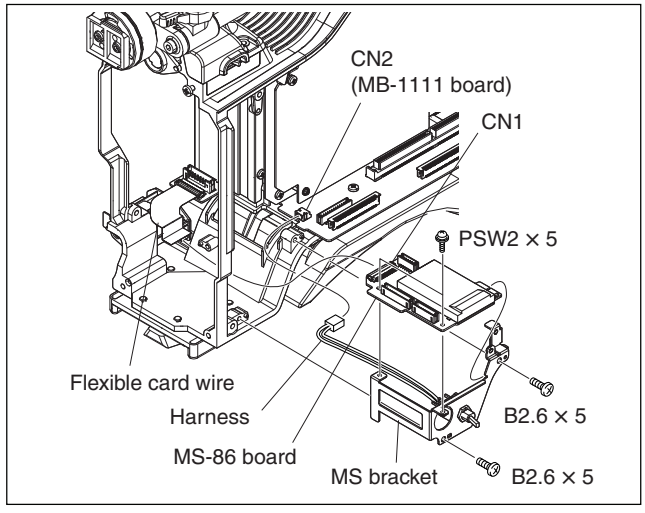
7. Remove the two screws (B2 × 5), and remove the CN-2948 board.
8. Remove the two screws (P2.6 × 6), and remove the RM-216 board.



9. Reinstall the removed parts by reversing steps 1 to 8 of removal.

7-7-14. MS-86 Board

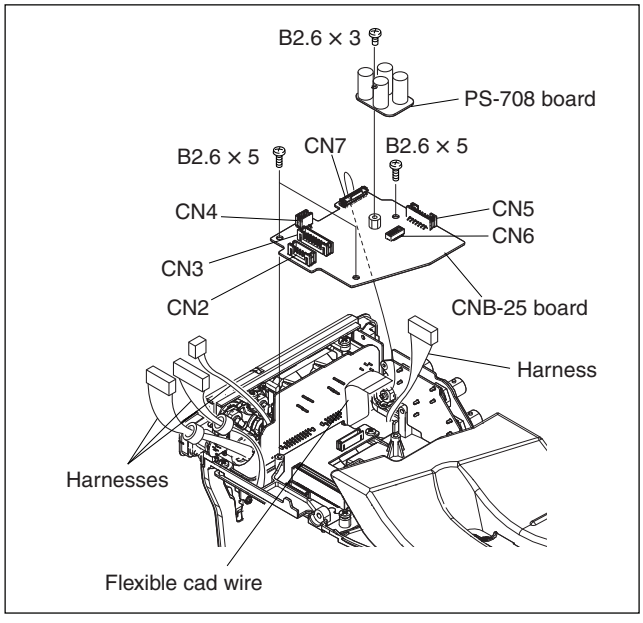
1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the front panel. (Refer to Section 1-7-5.)
4. Remove the DCP-44 board. (Refer to Section 7-7-2.)
5. Disconnect the flexible card wire from the connector (CN1) on the MS-86 board.
6. Remove the two screws (B2.6 × 5) , and remove the MS-86 bracket.
7. Disconnect the harness from the connector (CN2) on the MB-1111 board.
8. Remove the two screws (PSW2 × 5) , and remove the MS-86 board.



9. Reinstall the removed parts by reversing steps 1 to 8 of removal.

7-7-15. CNB-25 Board and PS-708 Board

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Disconnect the harnesses from the four connectors (CN2, CN3, CN4, CN5) on the CNB-25 board.
5. Disconnect the flexible card wire from the connector (CN7) on the CNB-25 board.
6. Remove the three screws (B2.6 × 5) , and disconnect the CNB-25 board (The PS-708 board is included.)
7. Remove the screw (B2.6 × 3) , and disconnect the PS-708 board from the connector (CN6) on the CNB-25 board.



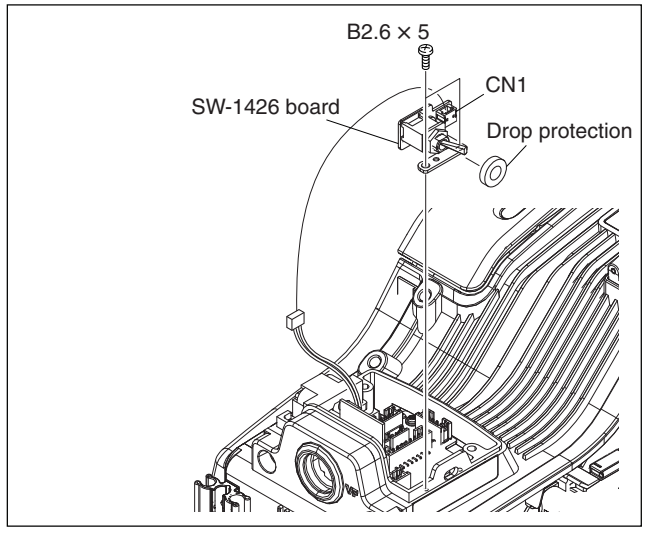
8. Reinstall the removed parts by reversing steps 1 to 8 of removal.

7-7-16. CN-3005 Board and SW-1426 Board

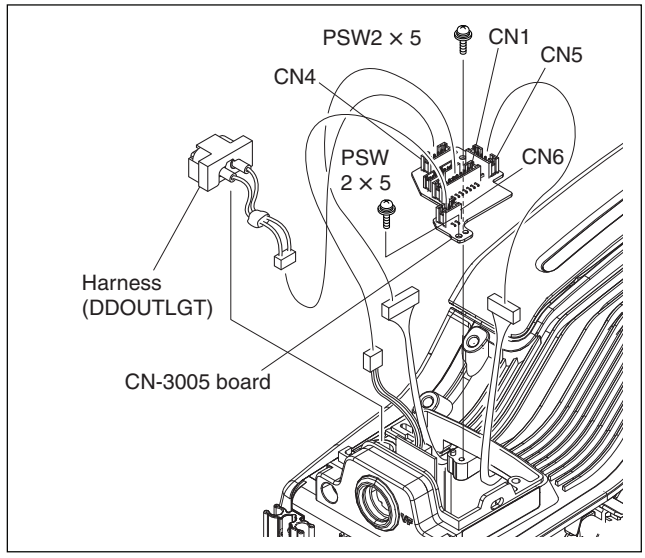
1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the handle assembly. (Refer to Section 1-7-4.)
3. Disconnect the harness from the connector (CN1) on the SW-1426 board.
4. Remove the two screws (B2.6 × 5) , and remove the SW-1426 board.

Note

Be careful not to drop the drop protection rubber attached on the switch.



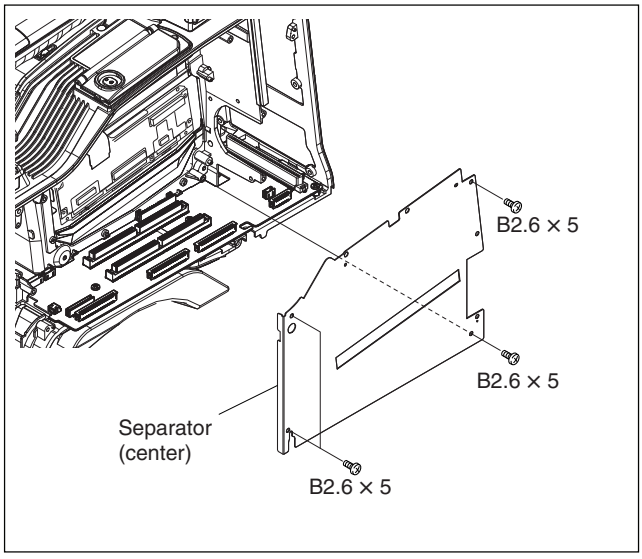
5. Disconnect the harness (DDOUTLGT) from the connector (CN4) on the CN-3005 board.
6. Disconnect the harnesses from the three connectors (CN3, CN5, CN6) on the CN-3005 board.
7. Remove the two screws (PSW2 × 5) , and remove the CN-3005 board.



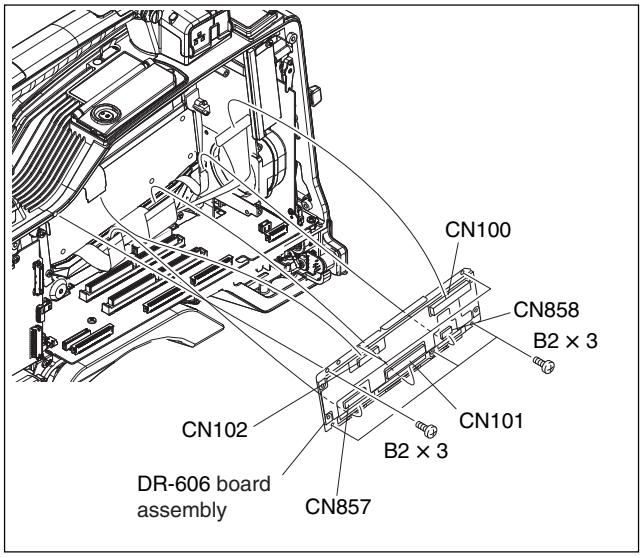
8. Reinstall the removed parts by reversing steps 1 to 7 of removal.

7-7-17. DR-606 Board

1. Remove the inside panel. (Refer to Section 1-7-3.)
2. Remove the DCP-44 board. (Refer to Section 7-7-2.)
3. Remove the DVP-45 board. (Refer to Section 7-7-3.)
4. Remove the fan motor (rear) . (Refer to Section 7-4.)
5. Remove the four screws (B2.6 × 5) , and remove the separator (center) .



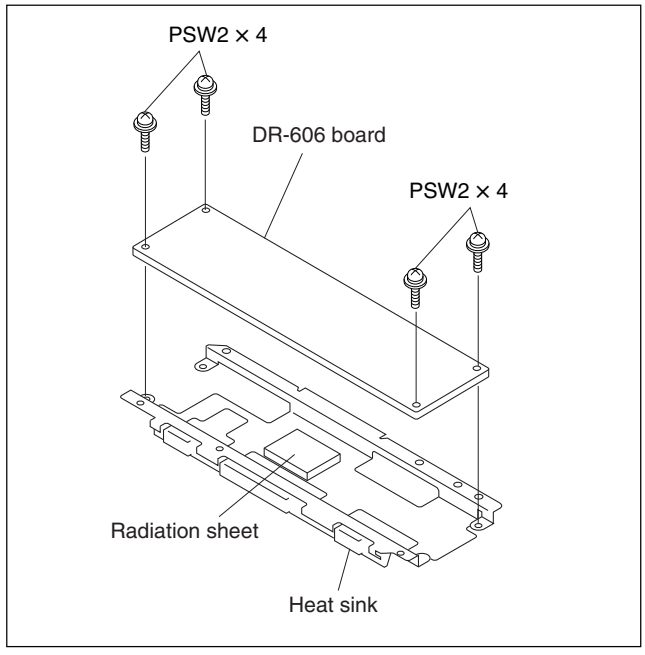
6. Disconnect the harness from the connector (CN100) .
7. Disconnect the flexible card wires from the four connectors (CN101, CN102, CN857, CN858) .
8. Remove the six screws (B2 × 3) , and remove the DR-606 board assembly.



9. Remove the four screws (PSW2 × 4) , and remove the DR-606 board.

Note

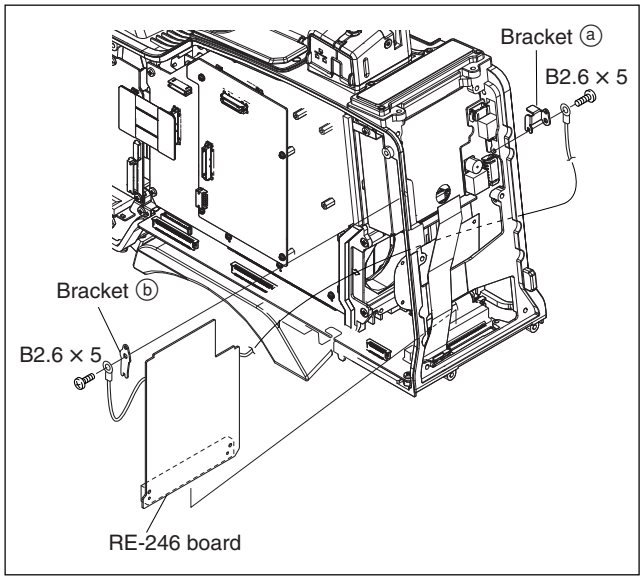
When the DR-606 board is removed from the heat sink, if the radiation sheet is affixed to the IC, peel of the radiation sheet from the IC carefully so as not to damage the radiation sheet.



10. Reinstall the removed parts by reversing steps 1 to 9 of removal.

7-7-18. RE-246 Board

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Remove the connector panel. (Refer to Section 7-7-8.)
5. Remove the rear panel. (Refer to Section 7-7-9.)
6. Remove the two screws (B2.6 × 5) , then remove the bracket ⓐ and bracket ⓑ .
7. Disconnect the RE-246 board from the connector (CN113) on the MB-1111 board.



8. Reinstall the removed parts by reversing steps 1 to 7 of removal.

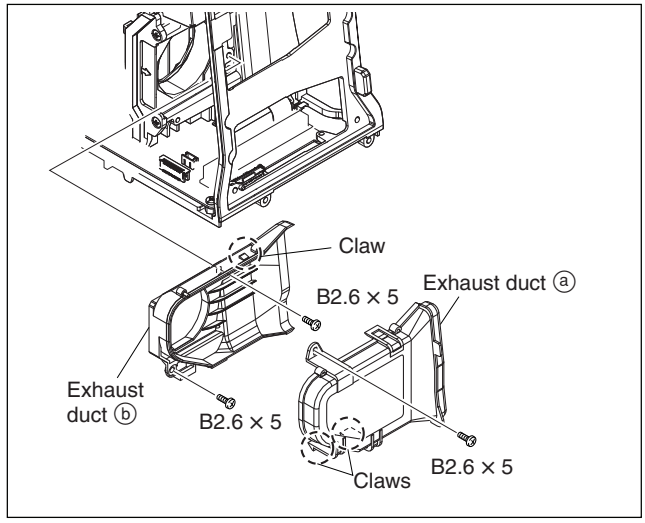
7-7-19. RX-101 Board

1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the connector cover. (Refer to Section 1-7-7.)
4. Remove the connector panel. (Refer to Section 1-7-8.)
5. Remove the rear panel. (Refer to Section 7-7-9.)
6. Remove the PS-731 board. (Refer to Section 7-7-12.)
7. Remove the RE-246 board. (Refer to Section 7-7-18.)
8. Remove the screw and three claws, and remove the exhaust duct ⓐ .

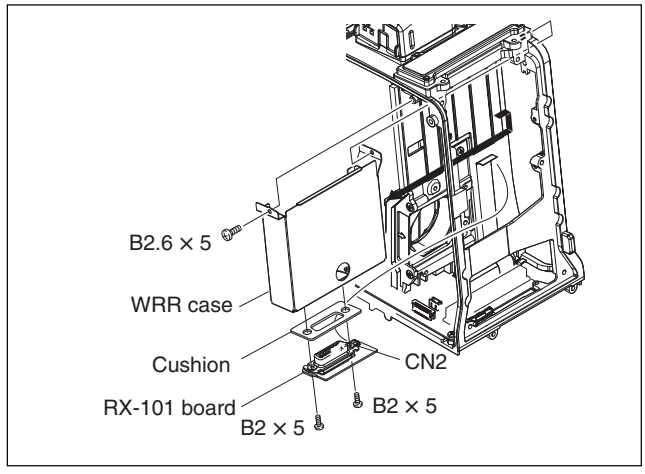
   Note

   Handle the film of the exhaust duct ⓐ with care since it may be damaged if strong force is applied or a sharp object touches it.

9. Remove the two screws, and remove the exhaust duct ⓑ .



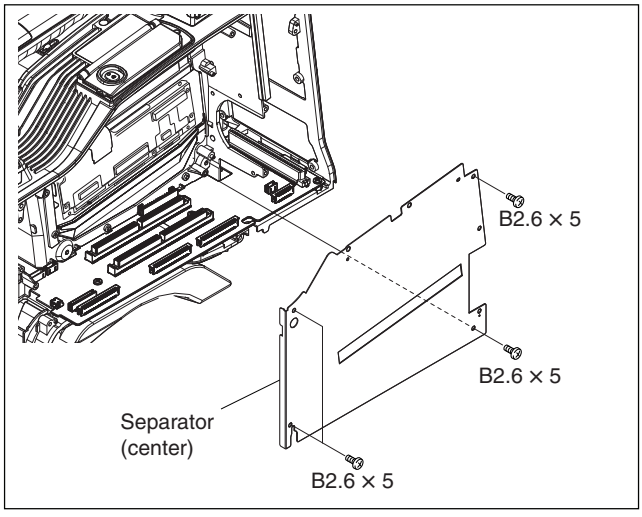
10. Remove the screw (B2.6 × 5) , and remove the WRR case in the direction of arrow.
11. Disconnect the flexible flat cable from the connector (CN2) .
12. Remove the two screws (B2 × 5) , an remove the RX-101 board.



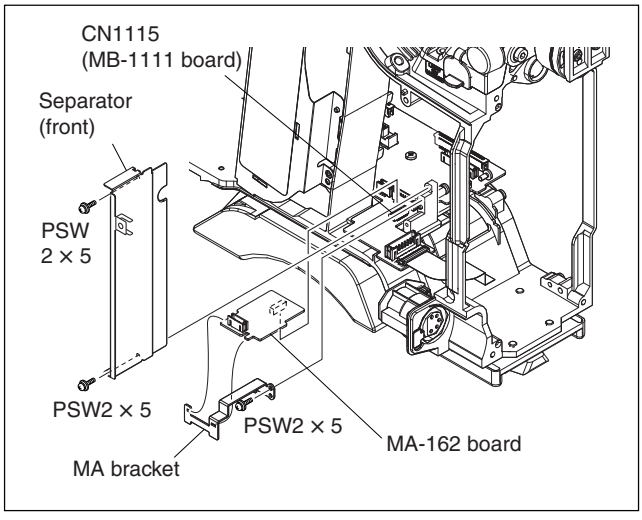
13. Reinstall the removed parts by reversing steps 1 to 12 of removal.

7-7-20. MB-1111 Board

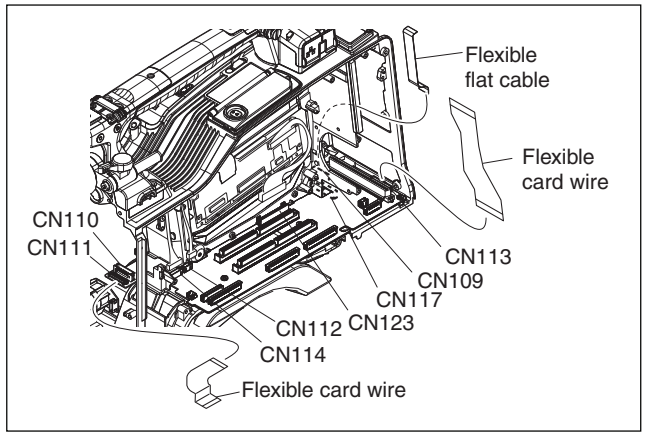
1. Remove the outside panel. (Refer to Section 1-7-1.)
2. Remove the inside panel. (Refer to Section 1-7-3.)
3. Remove the front panel. (Refer to Section 1-7-5.)
4. Remove the connector cover. (Refer to Section 1-7-7.)
5. Remove the connector panel. (Refer to Section 1-7-8.)
6. Remove the rear panel. (Refer to Section 1-7-9.)
7. Remove the DCP-44 board. (Refer to Section 7-7-2.)
8. Remove the DVP-45 board. (Refer to Section 7-7-3.)
9. Remove the fan motor (rear) . (Refer to Section 7-4.)
10. Remove the MS-86 board. (Refer to Section 7-7-14.)
11. Remove the RE-246 board. (Refer to Section 7-7-18.)
12. Remove the RX-101 board. (Refer to Section 7-7-19.)
13. Remove the four screws, and remove the separator (center) .



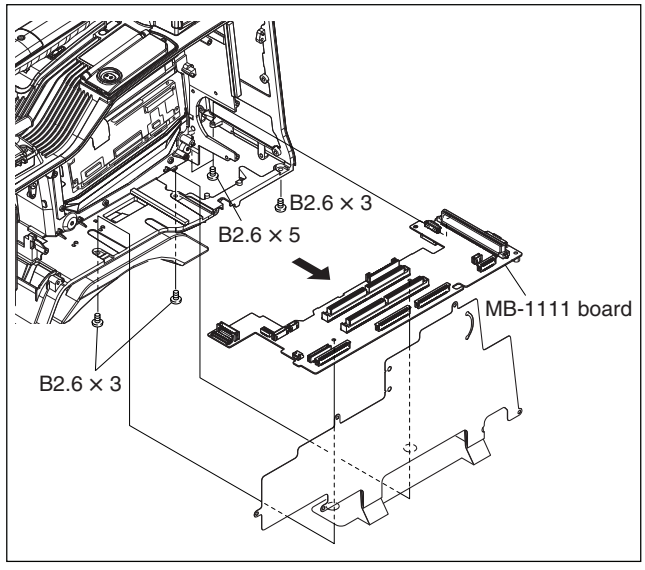
14. Remove the screw, and remove the MA bracket.
15. Disconnect the MA-162 board from the connector (CN115) on the MB-1111 board.
16. Remove the two screws , and remove the separator (front) .



17. Disconnect the flexible card wires from the three connectors (CN109, CN111, CN113) .
18. Disconnect the harnesses from the five connectors (CN110, CN112, CN114, CN117, CN123) .



19. Remove the five screws, and remove the MB-1111 board in the direction of arrow.



20. Reinstall the removed parts by reversing steps 1 to 19 of removal.

7-8. Service Action After Replacing or Repairing the Board

7-8-1. Optical Block Assembly

Refer to “8-2-1. Adjustment After Replacing the Optical Block Assembly”.

7-8-2. AT-177 Board

After replacing the AT-177 board, perform the procedure in the following order.

Note

Save the setting of the menu contents in the Memory Stick before performing the actions after replacement. (ALL File and SERVICE File)
Refer to step 4 in “5-3-2. ALL FILE” and step 1 in “5-3-5. SERVICE FILE” for details.

1. Upgrade the firmware to the latest version.
   Refer to “1-11-2. Firmware Update Using the USB Memory” for details.
2. Reset FRAMs (IC308) on the AT-177 board to the factory default settings.
   Reset them using the SERVICE menu.
   Refer to “4-1-1. Basic Operations of Setup Menus” for the details of operating menus.
   Refer also to “4-1-2. How to Display the SERVICE Menu” as required.
   (1) Open the switch cover with the power of the main unit turned on, and turn on the MENU ON/OFF switch.
   The menu appears on the viewfinder screen regardless of the ON/OFF state of the DISPLAY switch on the viewfinder.
   (2) Select “SERVICE” from the TOP menu, and press the MENU knob.
   (3) Scroll the screen to MENU SET by rotating the MENU knob, and press the MENU knob.
   (4) Point the cursor on FACTORY PRESET by rotating the MENU knob, and press the MENU knob.
   (5) Press the MENU knob, and execute FACTORY PRESET.
3. Perform the following adjustments.
   • Black set adjustment
   (After BLACK BALANCE is displayed, press and hold the AUTO W/B BAL switch toward BLACK until BLACK SET is displayed again.)
   • Perform AUTO CONCEAL.
   • Perform AUTO CONCEAL2.
4. Call back the contents of the previously saved menu settings from the memory stick. (ALL FILE, SERVICE FILE)
   For details, refer to “5-3-2. ALL FILE - 5. Calling the ALL FILE saved in memory stick (ALL FILE LOAD)” and “5-3-5. SERVICE FILE - 2. Calling the SERVICE FILE saved in memory stick (SERVICE FILE LOAD)”.

7-8-3. CN-3005 Board

After replacing the CN-3005 board, or after replacing EEPROM (IC2) on the CN-3005 board, perform the procedure in the following order.

Service Action after the board replacement

After replacing the CN-3005 board, mount the EEPROM (IC2) from the old board to the new board.

Service Action after the EEPROM

If you have replaced this with a new IC due to its defect, data should be saved. Contact your local Sony Sales Office/Service Center for details.

7-8-4. DCP-44 Board

Perform the following procedure when replacing the DCP-44 board.

1. Upgrade the firmware to the latest version. (Only when the board is replaced.)
   Refer to “1-11-2. Firmware Update Using the USB Memory” for details.
2. Perform the following adjustment.
   • VCO CONT frequency adjustment (Refer to Section 9-2-1.)

7-8-5. SY-355 Board

After replacing the SY-355 board, upgrade the firmware. Refer to “1-11-2. Firmware Update Using the USB Memory” for details.

7-8-6. FP-157 Board

When replacing the FP-157 board, or when replacing EEPROM (IC913) on the FP-157 board, perform the procedure in the following order.

1. Upgrade the firmware to the latest version. (Only when the board is replaced.)
   Refer to “1-11-2. Firmware Update Using the USB Memory” for details.
2. Perform the following adjustments.
   - AUDIO A/D Error Correction (Refer to Section 4-11.)
   - AUDIO D/A Error Correction (Refer to Section 4-12.)
   - Adjusting Battery End Detection Voltage (Refer to Section 4-14.)

   After replacing the volume (RV1/RV2), perform the following adjustment.
   - AUDIO LEVEL Volume Compensation (Refer to Section 4-13.)

7-8-7. DR-606 Board

Refer to “8-2-2. Adjustment After Replacing the DR-606 Board”.

7-8-8. SE-857 Board

Refer to “8-2-3. Adjustment After Replacing the SE-857 Board”.

Section 8
Optical Drive Alignment

8-1. Optical Drive Alignment Overview

8-1-1. Precautions

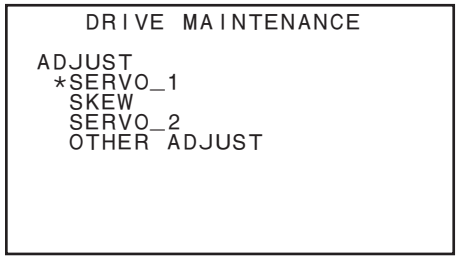
- Be sure to perform each adjustment in order unless any instructions are provided.
- To prevent the possibility of damage to the optical block assembly in the drive assembly by static electricity charged in a human body or clothes, be sure to establish a ground before starting the service operation. (Refer to Section 1-12-1.)
- The spindle motor and the actuator around the objective lens have a powerful magnet. If the magnetic force makes a screwdriver hit the actuator, the objective lens will be damaged. If a magnetic substance comes close to these parts, their characteristics may be changed.

8-1-2. Fixtures

- Alignment disc (PFD23A-RS)
- Torque driver (for 3 kg)
- Bit for torque driver (M2)
- Flat-blade screwdriver
- Locking compound
- Weight (50 to 100 g)

8-1-3. Preparations Before Adjustment

1. Turn off the power.
2. Remove the outside panel. (Refer to Section 1-7-1.)
3. Remove the loader assembly. (Refer to Section 7-1-1.)
4. Turn on the power.
5. Display the service menu. (Refer to Section 4-9.)
6. Select “VDR MAINTENANCE” by turning the MENU knob, and press the MENU knob.
7. Select “DRIVE MAINTENANCE” by turning the MENU knob, and press the MENU knob.
8. Select “YES” by turning the MENU knob, and press the MENU knob.
9. Select “ADJUST” by turning the MENU knob, and press the MENU knob. The ADJUST screen appears.



8-2. Procedures After Replacing the Optical Block Assembly and the Board

8-2-1. Adjustment After Replacing the Optical Block Assembly

After replacing the optical block assembly, perform adjustment in the following order.
- Servo1 Automatic Adjustment (Refer to Section 8-3.)
- Skew Adjustment (Refer to Section 8-4.)
- Servo2 Automatic Adjustment (Refer to Section 8-5.)
- Clearing Media Log (Refer to Section 8-6.)

8-2-2. Adjustment After Replacing the DR-606 Board

After replacing the DR-606 board, or after replacing any parts in repair, perform the procedure in the following order.
1. Upgrade the firmware to the latest version. (Only when the board is replaced.)
   Refer to “1-11-2. Firmware Update Using the USB Memory” for details.
2. Perform adjustment in the following order.
   - Servo1 Automatic Adjustment (Refer to Section 8-3.)
   - Skew Adjustment (Refer to Section 8-4.)
   - Servo2 Automatic Adjustment (Refer to Section 8-5.)
   - ACCELERATION OFFSET (Refer to Section 4-10-21.)

8-2-3. Adjustment After Replacing the SE-857 Board

After replacing the SE-857 board, or after replacing any parts in repair, perform adjustment in the following order.
- UPLOAD TO EEPROM (Refer to Section 4-10-26.)

Note

After replacing the SE-857 board, mount the EEPROM (IC4) from the old board to the new board.
If EEPROM (IC4) from the old board is not mounted to the new board, perform this menu only when IC4 is separately replaced.

- ACCELERATION OFFSET (Refer to Section 4-10-21.)

8-3. Servo1 Automatic Adjustment

Note

Make this adjustment with the loader assembly detached.

Fixtures

- Alignment disc (PFD23A-RS)
- Weight (50 to 100 g)

Adjustment Procedure

1. Display the adjustment items referring to Section 8-1-3.
2. Select "SERVO_1" by turning the MENU knob, and press the MENU knob. A confirmation screen appears.
3. Select "YES" by turning the MENU knob, and press the MENU knob.

```
SERVO_1


ADJUST START?

*YES
 NO
```

A confirmation screen appears.

```
SERVO_1

SET ALIGNMENT DISC
PFD23A-RS.

ADJUST START?

*YES
 NO
```

4. Select "YES" by turning the MENU knob.
5. Open the shutter of the cartridge of the alignment disc using the following procedure.
   Be sure to close it after the adjustment.

   Note

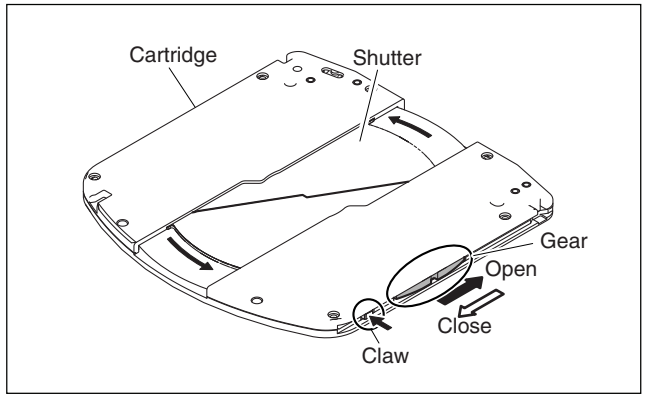
   Opening the shutter of the cartridge by hand is limited to the optical drive alignment.
   Do not open it for any other purpose or touch the disc in the cartridge.

   #### How to Open

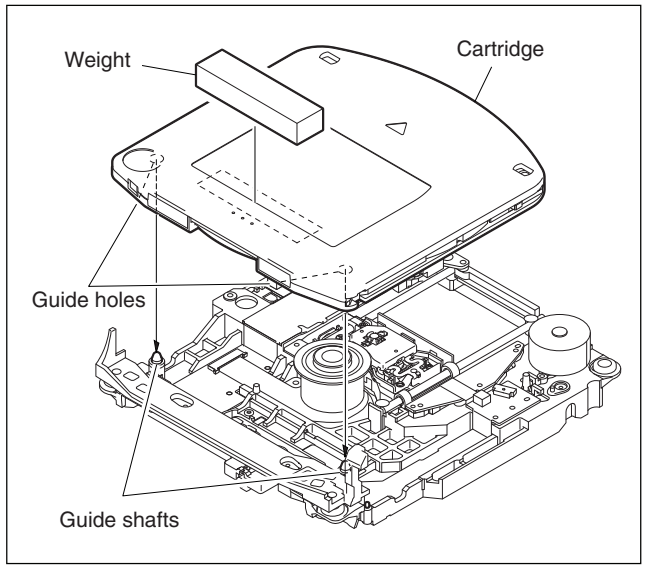
   Open the shutter a little in the direction of the arrow while pressing the claw. Then move the gear by hand until the shutter is completely opened.

   #### How to Close

   Move the gear in the direction of the arrow until the shutter is closed and the claw snaps.



6. Set the cartridge with its shutter opened so that its guide holes are aligned with the two guide shafts of the unit.
7. Put the weight on the cartridge.



8. Press the MENU knob. The result appears.

```
SERVO_1

ADJUSTING...COMPLETED
```

8-4. Skew Adjustment

Note

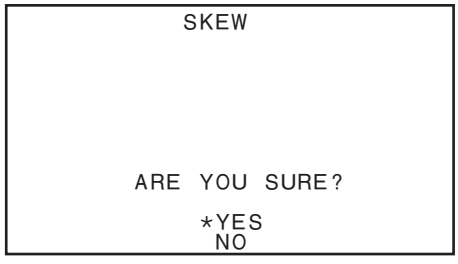
Make this adjustment with the loader assembly detached.

Fixtures

- Alignment disc (PFD23A-RS)
- Flat-blade screwdriver
- Locking compound
- Weight (50 to 100 g)

8-4-1. Tangential Skew Adjustment

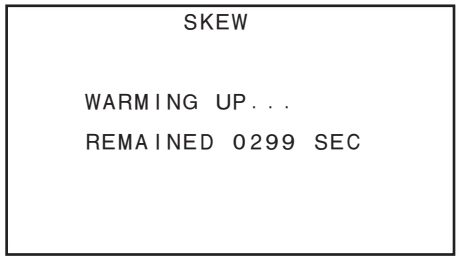
1. Display the adjustment item referring to Section 8-1-3.
2. Select “SKEW” by turning the MENU knob, and press the MENU knob. A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.



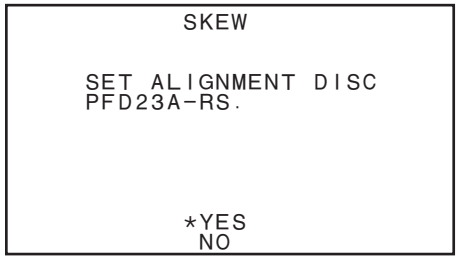
A warm-up screen appears.

Note

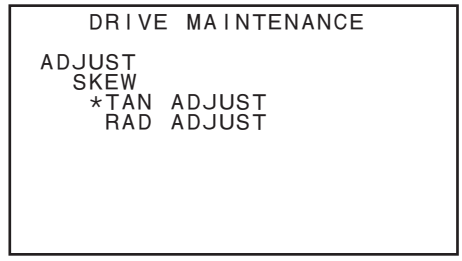
If five minutes has already passed since power ON, this screen appears only for a moment.



4. A confirmation screen appears when “0000 SEC” is displayed.

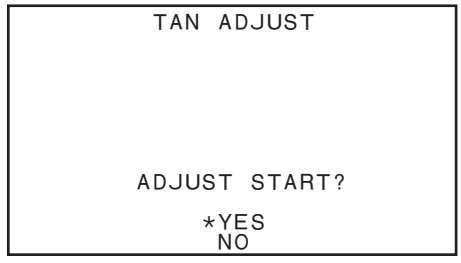


5. Set the alignment disc by referring to steps 4 to 6 in Section 8-3. Select “YES” by turning the MENU knob, and press the MENU knob. The skew adjustment selection screen appears.
6. Select “TAN ADJUST” by turning the MENU knob, and press the MENU knob.

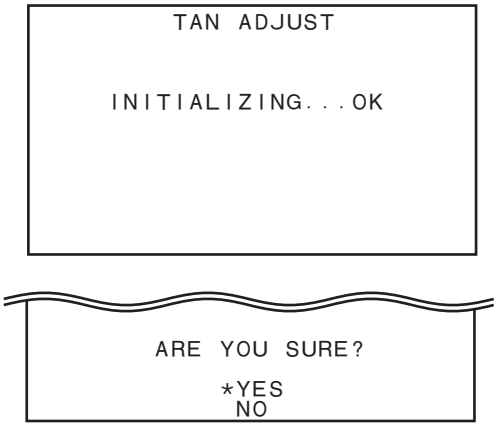


A confirmation screen appears.

7. Select “YES” by turning the MENU knob, and press the MENU knob.

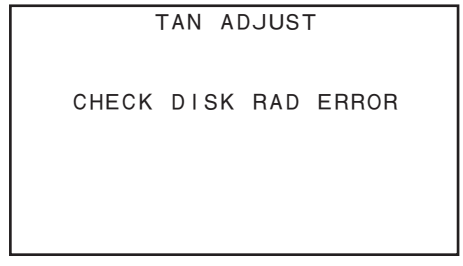


The result appears, and a confirmation screen appears.



In case of error:

The defect in the alignment disc is thought.

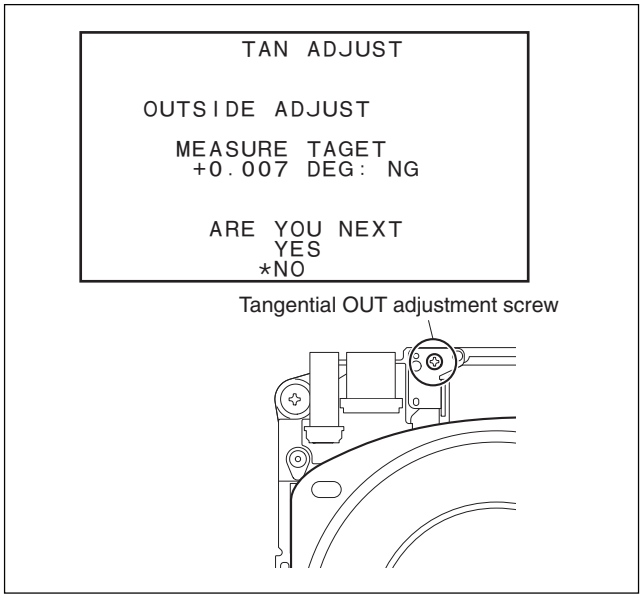


8. Select “YES” by turning the MENU knob, and press the MENU knob.
   The result on the tangential OUT side appears.
9. If the adjustment failed in step 8, repeat steps (1) to (2) until satisfactory result is obtained.
   (1) Turn the tangential OUT adjustment screw.

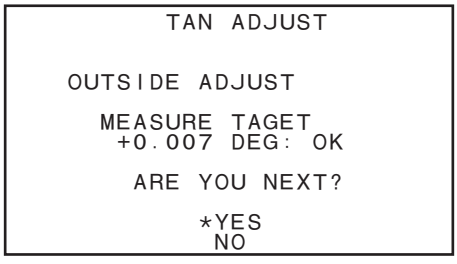
   Notes

   - The adjustment screw should be turned clockwise for this adjustment. If they are turned too much, turn them back sufficiently, and turn them clockwise again.
   - If measured data is +, turn the adjustment screw clockwise.
   - If measured data is −, turn the adjustment screw counterclockwise.

   (2) Press the SET button.
   The result on the tangential OUT side appears.



10. When the result is satisfactory, select “YES” by turning the MENU knob, and press the MENU knob. (“YES” cannot be selected when the result is not satisfactory.)

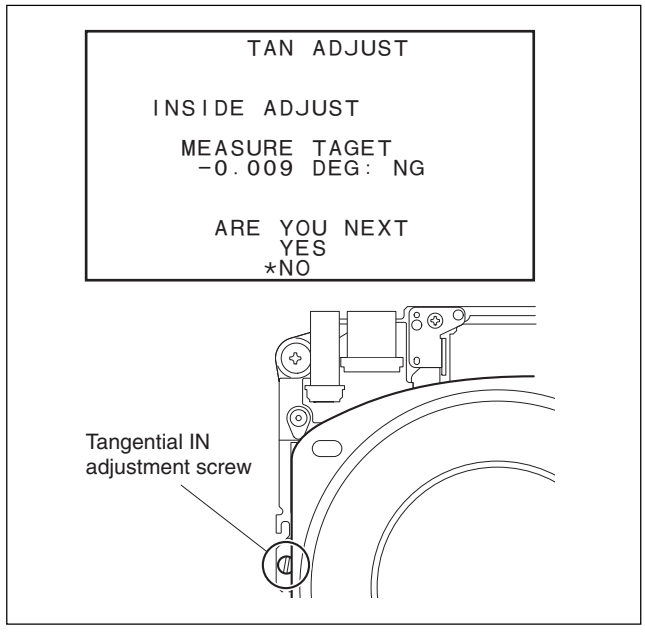


11. The result on the tangential IN side appears.
12. If the adjustment failed in step 11, repeat steps (1) to (2) until satisfactory result is obtained.
    (1) Turn the tangential IN adjustment screw.

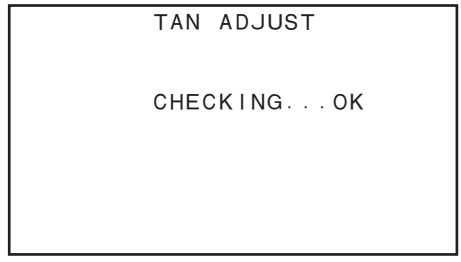
    Notes

    - The adjustment screw should be turned clockwise for this adjustment. If they are turned too much, turn them back sufficiently, and turn them clockwise again.
    - If measured data is +, turn the adjustment screw counterclockwise.
    - If measured data is −, turn the adjustment screw clockwise.

    (2) Press the SET button.
    The result on the tangential IN side appears.



13. When the result is satisfactory, select “YES” by turning the MENU knob, and press the MENU knob.
14. The tangential skew adjustment result appears.
    When “ERROR” appears, press the MENU knob to make adjustment from step 6.



8-4-2. Radial Skew Adjustment

Note

This adjustment is made automatically.
You need not adjust radial skew using the adjustment screw as shown in the previous adjustment item.

1. Perform steps 1 to 5 in “8-4-1. Tangential Skew Adjustment”.
2. Select “RAD ADJUST” by turning the MENU knob, and press the MENU knob.

```
    DRIVE MAINTENANCE

ADJUST
  SKEW
    TAN ADJUST
   *RAD ADJUST
```

   A confirmation screen appears.
3. Select “YES” by turning the MENU knob, and press the MENU knob.

```
         RAD ADJUST



      ADJUST START?

          *YES
           NO
```

   The result appears.

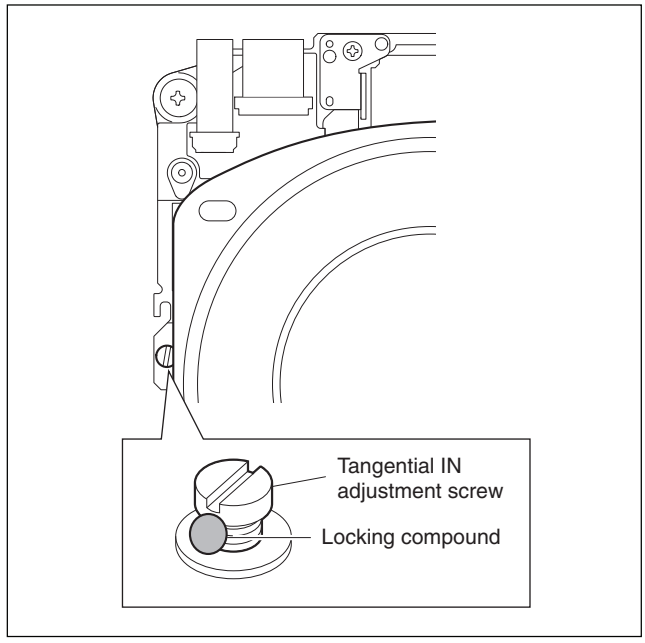
```
         RAD ADJUST

    ADJUSTING...COMPLETED
```

In case of error:

The defect in the optical block assembly is thought.

```
         RAD ADJUST

    ADJUSTING...FAILED
```

4. When “OK” appears, press the MENU switch.
   Note
   If failed, the optical block assembly may be defective.
5. Press the MENU switch again. The ADJUST screen appears.
6. Remove the cartridge and the weight.
7. Apply locking compound to the screw shown in the figure.
   Note
   Apply the locking compound to the screw as shown in the figure, being careful not to put it over the head of the screw.

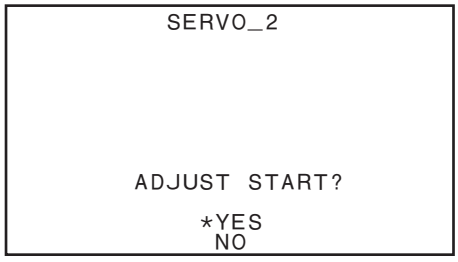


8-5. Servo2 Automatic Adjustment

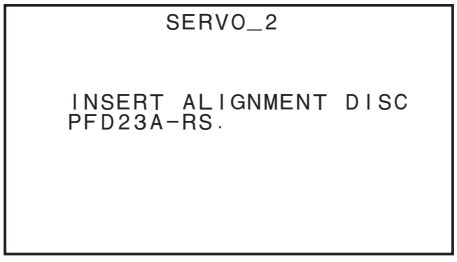
Note

This adjustment is not available when the loader assembly is removed. Be sure to install the loader assembly before making this adjustment.

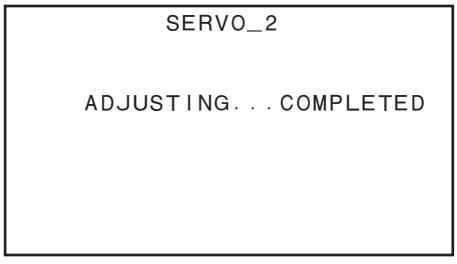
1. Clean the loader assembly. (Refer to Section 6-2-2.)
2. Install the loader assembly. (Refer to Section 7-1-1.)
3. Display the adjustment item referring to Section 8-1-3.
4. Select “SERVO_2” by turning the MENU knob, and press the MENU knob. A confirmation screen appears.
5. Select “YES” by turning the MENU knob, and press the MENU knob.



A confirmation screen appears.



6. Set the alignment disc. The result appears.



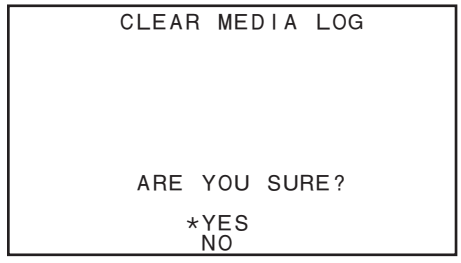
7. Press the MENU switch. The alignment disc is ejected.

8-6. Clearing Media Log

Notes

- This menu is used to clear acquired media log.
  Once this menu is executed, the cleared log data can no longer be restored.
- The adjustment value is stored for each media.
  If the optical drive is replaced, the adjustment value differs from the one that is stored, so the media log needs to be cleared.

1. Select “OTHERS ADJUST” by turning the MENU knob, and press the MENU knob.
2. Select “CLEAR MEDIA LOG” by turning the MENU knob, and press the MENU knob. A confirmation screen appears.
3. Select “YES” by turning the MENU knob, press the MENU knob.

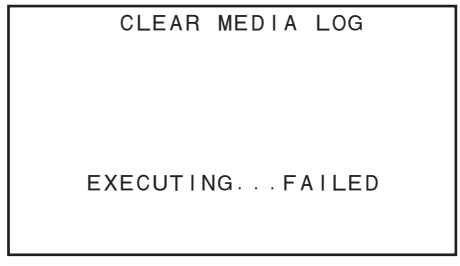


The result appears.

4. Perform the procedure after adjustment.
   (Refer to Section 8-7.)

In case of error:

The defect in the EEPROM (IC4/SE-857 board) is thought.



8-7. After Adjustment

1. Turn off the power.
2. Reinstalled the outside panel. (Refer to Section 1-7-2.)

Section 9
Electrical Alignment

9-1. Preparation

9-1-1. Fixtures and Equipment

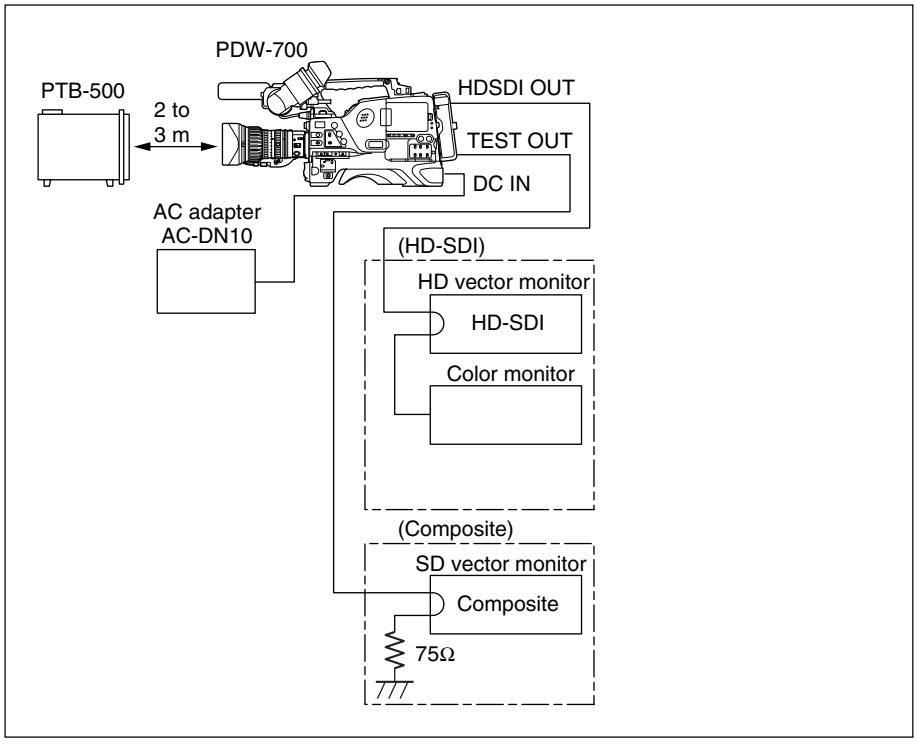
[Fixtures]

- Pattern box PTB-500
  Part No.: J-6029-140-B
- Grayscale chart
  Commercially available on the market Reflective type (16:9)
- White window chart

[Equipment]

- Oscilloscope: Tektronix TDS3054 or equivalent (150 MHz or more)
- HD waveform monitor: LEADER ELECTRONICS CORP.LV5152DA or equivalent
- SD waveform monitor: Tektronix 1755A or equivalent
- Frequency counter: Advantest TR5821AK or equivalent
- Color monitor: Sony HDM-20E1U/14E1U/14E5U or equivalent
- Signal generator: Tektronix SG-5010/TG-2000 or equivalent
- AC adapter: Sony AC-DN10
- Luminance meter: Konica Minolta LS-110 or equivalent
- Luxmeter: Konica Minolta T-10 or equivalent

9-1-2. Connection



9-1-3. Switch Setting before Adjustment

Before performing adjustment, set switches and menu as follows.

Inside panel:
GAIN switch → L (0 dB)
OUTPUT/DCC switch → CAM/OFF
WHITE BAL switch → PRST

Front panel:
SHUTTER switch → OFF
Filter knob → 1

Lens:
LENS → MANU
IRIS → C (CLOSE)

Menu:
MENU: OPERATION
PAGE: GAIN SW
ITEM: GAIN LOW → 0 dB
ITEM: GAIN MID → 6 dB
ITEM: GAIN HIGH → 12 dB

MENU: OPERATION
PAGE: OUTPUT 1
ITEM: SDI OUT 1 SELECT → HDSDI

MENU: PAINT
PAGE: SW STATUS
ITEM: GAMMA → ON
ITEM: KNEE → ON
ITEM: WHITE CLIP → ON
ITEM: DETAIL → ON

9-1-4. Notes on Adjustment

- Some adjustments of the Electrical Alignment require menu to be used.
  Put the unit into the SERVICE mode to display the SERVICE menu. (Refer to “4-9. SERVICE Menu”.)
- Be sure to turn off the power before extending the plug-in board using the extension board.
- Before starting adjustment, set the main POWER switch of Camcorder to ON, then be sure to allow for about 10-minute warm-up time.

9-1-5. Gray-Scale Chart and its Maintenance

Use of a reflective-type gray-scale chart (with reflectance of 89.9%) is recommended for the Gain adjustment. If a reflective-type gray-scale chart is not available, use a transparent-type gray-scale chart with a well-maintained pattern box.
Calibrate illuminance (or luminance) on the surface of the gray-scale chart to the specified value as follows. Also, calibrate the color temperature to exactly 3200K by adjusting the illumination.

Information on the reflective gray-scale chart (16:9)

Availability of reflective-type gray-scale chart

The reflective-type gray-scale chart (16:9) is commercially available.

Chart : Reflective-type gray-scale chart (GS-HD of Murakami Color Research Lab. Inc. or equivalent)
Available from : Murakami Color Research Lab. Inc.

Notes on handling

- Do not touch the chart surface with bare hands.
- Do not rub or stain the chart surface.
- Do not expose or use the chart under direct sunlight for a long time.
- Do not leave or store the chart in a place that is very humid or contains toxic gas.
- Do not place anything on top of the chart surface.
- When a chart is stored for a long time without using it, open the case and leave the chart to dry for 30 minutes or 1 hour once or twice every month.

Guideline of replacing the chart when used as the reference chart

The reflective characteristics of the reflective-type gray-scale chart can easily deteriorate over time. As a guideline, the chart should be replaced every 2 years, but the replacement interval depends on the storage conditions of the chart.

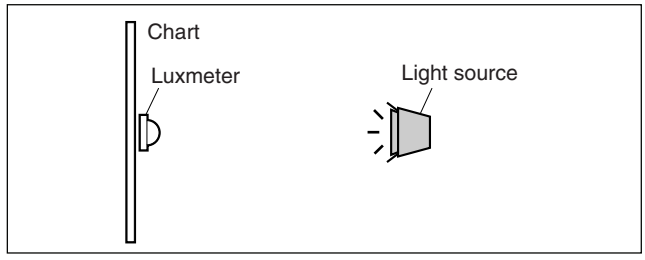
Setting Illuminance (In case of using reflective-type chart)

Measuring equipment : Luxmeter (Minolta T-10 or equivalent, pre-calibrated)

1. Turn on the light source that illuminates the chart and allow it to warm-up for about 30 minutes.
2. Fix a luxmeter in front of the reflective-type chart. Obtain an illuminance of 2000 lx uniformly over the entire surface of the chart by adjusting the position and angle of the illuminations.

   Note

   Place the light source at the same height and direction of the camera that shoots the chart surface.



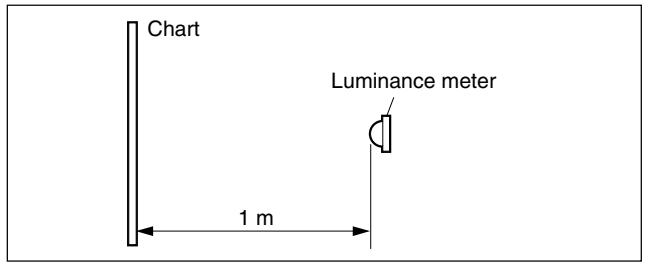
Setting Luminance (In case of using transparent-type chart)

Measuring equipment : Photometer (Minolta LS-110 or equivalent, pre-calibrated)

1. Turn on the pattern box and allow it to warm-up for about 30 minutes.
2. Place the pattern box such that direct light does not fall on the chart surface.
   (Alternatively, place a cover the inside of which is painted with unglazed black, around the entire chart.)
3. Fix a photometer 1 m in front of the chart in the pattern box.
4. Obtain the luminance of 573 ±6 cd/m^2 at the center of the chart by adjusting the BRIGHTNESS control of the pattern box.

   Note

   Adjusting luminance of 573 ±6 cd/m^2 creates the same illuminance of 2000 lx on the reflective-type gray-scale chart with reflection of 89.9%.



9-2. Adjustment

9-2-1. Confirming VCO CONT Frequency

Notes

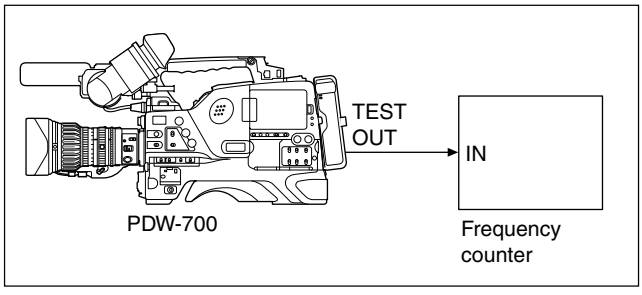
- Perform this check only when the DCP-44 board is replaced.
- Before measurement, set main POWER switch of Camcorder to ON, and be sure to allow for about 10-minute warm up time.
- Images may deteriorate during adjustment.

Fixtures and Equipment

- Frequency counter

Preparation

- Connect as follows.



- On the menu, set as follows.
  MENU: SERVICE
  PAGE: VCO ADJUST

Adjustment Procedure

Adjust the following thee types of VCO:

- HDCK(N)
- HDCK(P)
- SDCK

1. HDCK (N) adjustment
   Set CLK OUT SEL to HDCK (N).
   The signal of the following specification is output from the TEST OUT connector.
   Specification: 37,087,912 ±70 Hz
   When the signal is outside the specification, perform the following adjustment:
   Change the setting value of HDCK (NTSC AREA) so that the signal meets within the specification.
   When the specification is met, press the MENU knob, and fix the value.
2. HDCK (P) adjustment
   Set CLK OUT SEL to HDCK (P).
   The signal of the following specification is output from the TEST OUT connector.
   Specification: 37,125,000 ±70 Hz
   When the signal is outside the specification, perform the following adjustment:
   Change the setting value of HDCK (PAL AREA) so that the signal meets within the specification.
   When the specification is met, press the MENU knob, and fix the value.
3. SDCK adjustment
   Set CLK OUT SEL to SDCK.
   The signal of the following specification is output from the TEST OUT connector.
   Specification: 27,000,000 ±50 Hz
   When the signal is outside the specification, perform the following adjustment:
   Change the setting value of SDCK so that the signal meets within the specification.
   When the specification is met, press the MENU knob, and fix the value.
4. Completing adjustment
   After adjusting 1 through 3, set CLK OUT SEL to OFF.

9-2-2. Modulator Balance Adjustment

Preparation:

- Put the unit into the SERVICE mode.
  (Refer to “4-1-2. How to Display the SERVICE Menu”.)
- WHITE BAL switch (inside panel) → PRST
- OUTPUT/DCC switch (inside panel) → CAM/ON
- MENU → VF DISP display

Adjustment Procedure:

1. AUTO W/B BAL switch (front panel) → BLK
   Hold this switch in BLK state until the message “BLACK SET” on the viewfinder is displayed twice.
2. A few seconds later after releasing the switch, check that the message “ABB OK” is displayed on the viewfinder.

9-2-3. VA Gain Adjustment

Notes

- Use an 89.9%-reflective chart in this adjustment as possible. For details, refer to "9-1-5. Gray-Scale Chart and its Maintenance".
- If the "16:9" chart is not available, shoot a "4:3" chart so that the chart width is aligned with the underscanned monitor frame.

Fixtures and Equipment:

- Oscilloscope, SD waveform monitor
- Grayscale chart (16:9)

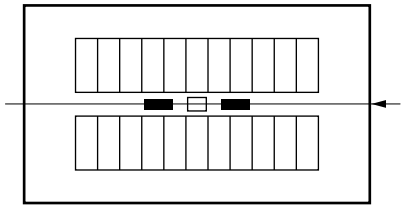
Preparation:

- Connect an SD waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (inside panel) → CAM/ON
- WHITE BAL switch (inside panel) → PRST
- Shoot a grayscale chart (16:9) in the full underscanned monitor frame.

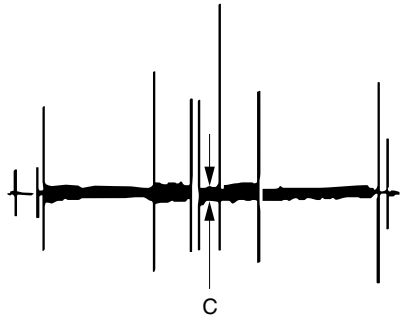
Adjustment Procedure:

1. AUTO W/B BAL switch (front panel) → BLK
   (Perform the automatic black balance adjustment.)
2. On the menu, set as follows.
   MENU: MAINTENANCE
   PAGE: WHITE SETTING
   ITEM: COLOR TEMP. <P> : 3200
   ITEM: C TEMP BAL <P> : 0

   MENU: PAINT
   PAGE: SW STATUS
   ITEM: GAMMA → OFF
   ITEM: DETAIL → OFF
3. Select the center portion by using the waveform monitor.



4. Set the waveform monitor to the CHROMA mode.
5. Equipment: Waveform monitor
   Test point: TEST OUT connector
   Adj. point: MENU: SERVICE
   PAGE: CCD ADJUST
   ITEM: R CCD GAIN
   ITEM: B CCD GAIN
   Spec.: Minimize carrier leakage C by using the variable resistors alternately.



Setting after Adjustment:

- On the menu, set as follows.
  MENU: PAINT
  PAGE: SW STATUS
  ITEM : GAMMA → ON
  ITEM : DETAIL → ON

9-2-4. Black Shading Adjustment

Fixtures and Equipment:

HD waveform monitor

Preparation:

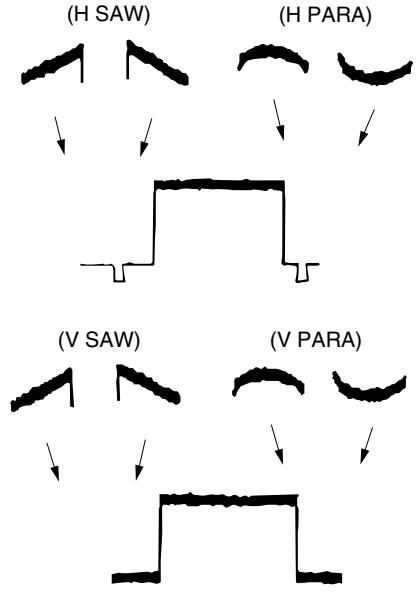
- Connect an HD waveform monitor to the TEST OUT connector.
- Lens IRIS → CLOSE
- Waveform monitor setting
  LUM mode
  VOLT FULL SCALE range → 0.5

Adjustment Procedure:

Perform either step 1 or step 2 for the black shading adjustment.

1. Auto black shading adjustment
   (1) On the menu, set as follows.
   MENU: SERVICE
   PAGE: SHADING
   ITEM: AUTO BLK SHADING → EXEC
   (2) Push the MENU knob.
   (3) When adjustment ends successfully, the message "COMPLETE" appears.
   Note
   The auto adjustment takes about 30 seconds.

2. Manual black shading adjustment
   When performing fine adjustment after executing the black shading auto adjustment, or when performing manual adjustment without executing the auto adjustment, proceed as follows.
   (1) On the menu, set as follows.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: SHADING CH SEL → G
   ITEM: TEST OUT SELECT → G
   Note
   The HD signal is output when TEST OUT SELECT is set to a signal other than VBS.
   (2) On the menu, perform the G-channel adjustment as follows.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: G BLK H SAW
   ITEM: G BLK V SAW
   ITEM: G BLK H PARA
   ITEM: G BLK V PARA
   Spec.: Make the waveform of the G-channel flat.



   (3) On the menu, set as follows.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: SHADING CH SEL → R
   ITEM: TEST OUT SELECT → R
   (4) Adjust the shading for the R-channel in the same procedure as the G-channel adjustment.
   (5) On the menu, set as follows.
   MENU: SERVICE
   PAGE: BLACK SHADING
   ITEM: SHADING CH SEL → B
   ITEM: TEST OUT SELECT → B
   (6) Adjust the shading for the B-channel in the same procedure as the G-channel adjustment.

Setting after Adjustment:

- On the menu, set as follows.
  MENU: SERVICE
  PAGE: BLACK SHADING
  ITEM: TEST OUT SELECT → VBS

9-2-5. White Shading Adjustment

Note

This adjustment could not be correctly performed if the uneven white pattern is used, luminance is not correct, or lens iris and lens zoom are not in good conditions.

Fixtures and Equipment:

- HD waveform monitor
- Full white pattern (White window chart)

Preparation:

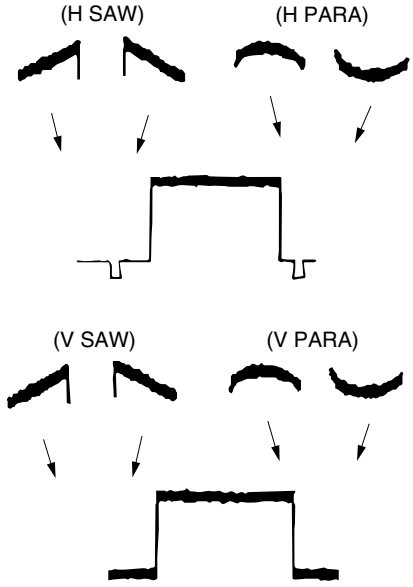
- Connect an HD waveform monitor to the TEST OUT connector.
- Lens IRIS → AUTO
- Waveform monitor setting
  LUM mode
  VOLT FULL SCALE range → 0.5
- Shoot a fully occupied full white pattern in the under-scanned monitor frame.

Adjustment Procedure:

Perform either step 1 or step 2 for the white shading adjustment.

1. Auto white shading adjustment
   (1) On the menu, set as follows.
   MENU: SERVICE
   PAGE: SHADING
   ITEM: AUTO WHT SHADING → EXEC
   (2) Push the MENU knob.
   (3) When adjustment ends successfully, the message "COMPLETE" appears.
   Note
   The auto adjustment takes about 30 seconds.

2. Manual white shading adjustment
   When performing fine adjustment after executing the black shading auto adjustment, or when performing manual adjustment without executing the auto adjustment, proceed as follows.
   (1) On the menu, set as follows.
   MENU: SERVICE
   PAGE: WHITE SHADING
   ITEM: WHT SHAD CH SEL → G
   ITEM: TEST OUT SELECT → G
   Note
   The HD signal is output when TEST OUT SELECT is set to a signal other than VBS.
   (2) On the menu, perform the G-channel adjustment as follows.
   MENU: SERVICE
   PAGE: WHITE SHADING
   ITEM: G WHT H SAW
   ITEM: G WHT V SAW
   ITEM: G WHT H PARA
   ITEM: G WHT V PARA
   Spec.: Make the waveform of the G-channel flat.



   (3) On the menu, set as follows.
   MENU: SERVICE
   PAGE: WHITE SHADING
   ITEM : WHT SHAD CH SEL → R
   ITEM : TEST OUT SELECT → R
   (4) Adjust the shading for the R-channel in the same procedure as the G-channel adjustment.
   (5) On the menu, set as follows.
   MENU: SERVICE
   PAGE: WHITE SHADING
   ITEM: WHT SHAD CH SEL → B
   ITEM: TEST OUT SELECT → B
   (6) Adjust the shading for the B-channel in the same procedure as the G-channel adjustment.

Setting after Adjustment:

- On the menu, set as follows.
  MENU: SERVICE
  PAGE: WHITE SHADING
  ITEM: TEST OUT SELECT → VBS

9-2-6. Black Set Adjustment

Fixtures and Equipment:

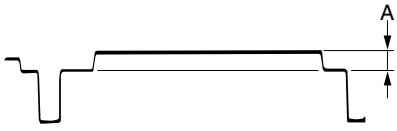
HD waveform monitor

Preparation:

- Connect an HD waveform monitor of the HD-SDI to the HDSDI OUT connector.
- Lens IRIS → CLOSE
- AUTO W/B BAL switch (front panel) → BLK
  (Perform the automatic black balance adjustment.)

Adjustment Procedure:

1. On the menu, adjust as follows.
   MENU: PAINT
   PAGE: PAINT
   ITEM: MASTER BLACK
   Spec.: A = 3 ± 1 IRE (NTSC)
   A = 20 ± 7 mV (PAL)



9-2-7. Flare Adjustment

Fixtures and Equipment:

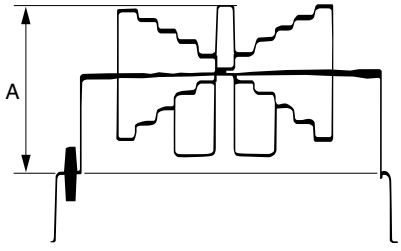
- SD waveform monitor
- Grayscale chart (16:9)

Preparation:

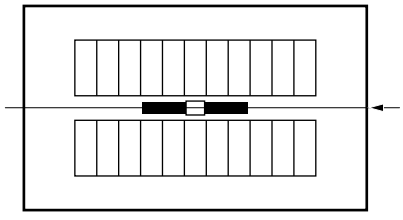
- Connect an SD waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (inside panel) → CAM/ON
- On the menu, set as follows.
  MENU: SERVICE
  PAGE: BLACK/FLARE
  ITEM: TEST OUT SELECT → VBS
- Shoot a grayscale chart in the full underscanned monitor frame.

Adjustment Procedure:

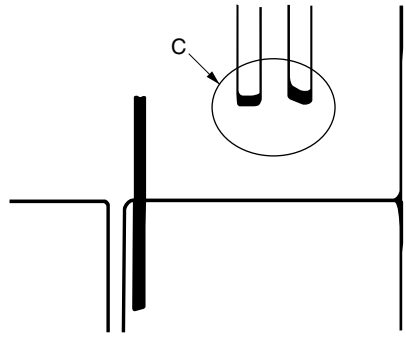
1. Lens IRIS: Open the lens iris by one step from the reference setting A.
   Spec.: A = 100 ±2 IRE (NTSC)
   700 ±14 mV (PAL)



2. On the menu, set as follows.
   MENU: SERVICE
   PAGE: BLACK/FLARE
   ITEM: G FLARE → 0
3. Select center portion by using the waveform monitor.



4. On the menu, adjust as follows.
   MENU: SERVICE
   PAGE: BLACK/FLARE
   ITEM: R FLARE
   Spec.: Minimize the carrier leakage at portion C. (R-ch)



5. On the menu, adjust as follows.
   MENU: SERVICE
   PAGE: BLACK/FLARE
   ITEM: B FLARE
   Spec.: Minimize the carrier leakage at portion C. (B-ch)
6. Repeat steps 4 and 5 several times and minimize the carrier leakage at portion C.

9-2-8. Auto Iris Adjustment

Fixtures and Equipment:

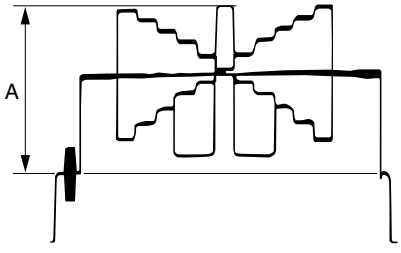
- SD waveform monitor
- Black and white monitor
- Grayscale chart

Preparation:

- Connect an SD waveform monitor to the TEST OUT connector.
- Lens IRIS → AUTO
- OUTPUT/DCC switch (inside panel) → CAM/ON
- Shoot a grayscale chart in the full underscanned monitor frame.

Adjustment Procedure:

1. On the menu, adjust as follows.
   MENU: MAINTENANCE
   PAGE: AUTO IRIS 2
   ITEM: IRIS APL RATIO
   Spec.: Set AUTO iris operation depending on the application.
   (Automatic iris operation mode setting can be set in the range of the average level operation to peak-to-peak level operation of the video signal.)
   IRIS APL RATIO = MIN → peak-to-peak level only
   IRIS APL RATIO = MAX → average level only
2. On the menu, adjust as follows.
   MENU: MAINTENANCE
   PAGE: AUTO IRIS 2
   ITEM: IRIS LEVEL
   Spec.: A = 100 ±2 IRE (NTSC)
   A = 700 ±14 mV (PAL)



3. On the menu, adjust as follows.
   MENU: MAINTENANCE
   PAGE: AUTO IRIS 2
   ITEM: IRIS SPEED
   Spec.: Adjust to the desired operation speed of auto iris.
4. On the menu, set as follows.
   MENU: MAINTENANCE
   PAGE: AUTO IRIS 2
   ITEM: CLIP HIGH LIGHT → ON or OFF
   Spec.: Set the level to the desired AUTO iris.

9-2-9. RPN Adjustment

Notes

- RPN (Residual Point Noise) of CCD is usually corrected automatically (APR) during automatic black balance adjustment (ABB). When there exists RPN that is not corrected by APR, perform this adjustment.
- This adjustment is performed on the MANUAL RPN screen or the MANUAL RPN (SLS) page in the SERVICE menu.
  Adjustment is performed using the MANUAL RPN page usually, but perform the RPN adjustment using the MANUAL RPN (SLS) page for the RPN that appears only in slow shutter mode (when "SLS: 2 FRAME" or more is selected.). Procedure is the same as that when using the MANUAL RPN page.

Fixtures and Equipment:

Color monitor

Preparation:

- Connect an HD color monitor to the TEST OUT connector.
- This is the setting for the RPN adjustment that appears only in slow shutter mode.
  SHUTTER switch (front panel) → SLS:2 FRAME or more
- On the menu, set as follows
  MENU: SERVICE
  PAGE: MANUAL RPN (Standard adjustment)
  or
  PAGE: MANUAL RPN (SLS) (For the RPN adjustment that appears only in slow shutter mode.)

Adjustment Procedure:

Note

- All the adjustments are to be performed using the MANUAL RPN page or the MANUAL RPN (SLS) page on the SERVICE menu.

1. AUTO W/B BAL switch (front panel) → BLK
   (Perform the automatic black balance adjustment.)
2. Choose the channel (R, G or B) to be corrected.
   ITEM: TEST OUT SELECT → R, G, B
   This sets TEST OUT to output R, G, or B in HD.
3. Adjust the values of H and V. Then move the center of the cross cursor to RPN.
   ITEM: RPN CURSOR → ON
   ITEM: CURSOR H POS
   ITEM: CURSOR V POS
4. Push the MENU knob and save the RPN data (corrected value).
   ITEM: RECORD RPN → EXEC
5. The message "EXEC OK?" appears.
   After confirming the RPN is removed, push the MENU knob. The message "COMPLETE!" appears and the correction is performed.

   To cancel the RPN correction after the correction is completed, perform the Cancel without moving the position of the cross cursor.
   ITEM: DELETE RPN → EXEC
6. To correct another RPN, repeat steps 2 to 5.

Setting after Adjustment:

ITEM: RPN CURSOR → OFF
ITEM: TEST OUT SELECT → VBS

9-2-10. S/H DC Adjustment

Note

If it is poorly adjusted, the RPN correction cannot be optimized, or vertical stripes will appear when MASTER GAIN is increased.
In such case, perform this adjustment.

Fixtures and Equipment:

HD picture monitor

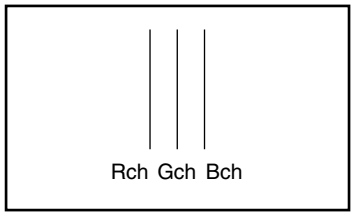
Preparation:

- Connect an TEST OUT connector to the (HD-Y) of HD picture monitor.
- Lens IRIS → CLOSE
- GAIN SW → 12 dB
- WHITE BAL SW → PRESET
- AUTO W/B BAL switch (Font panel) → BLK
  (Perform the automatic black balance adjustment.)

Adjustment Procedure:

1. On the menu, adjust as follows.
   MENU : SERVICE
   PAGE : S23 S/H DC
   ITEM : S/H DC ADJ MODE → ON
   ITEM : TEST OUT SELECT → R

   If this adjustment is poorly performed, the vertical stripes appear on the monitor screen.



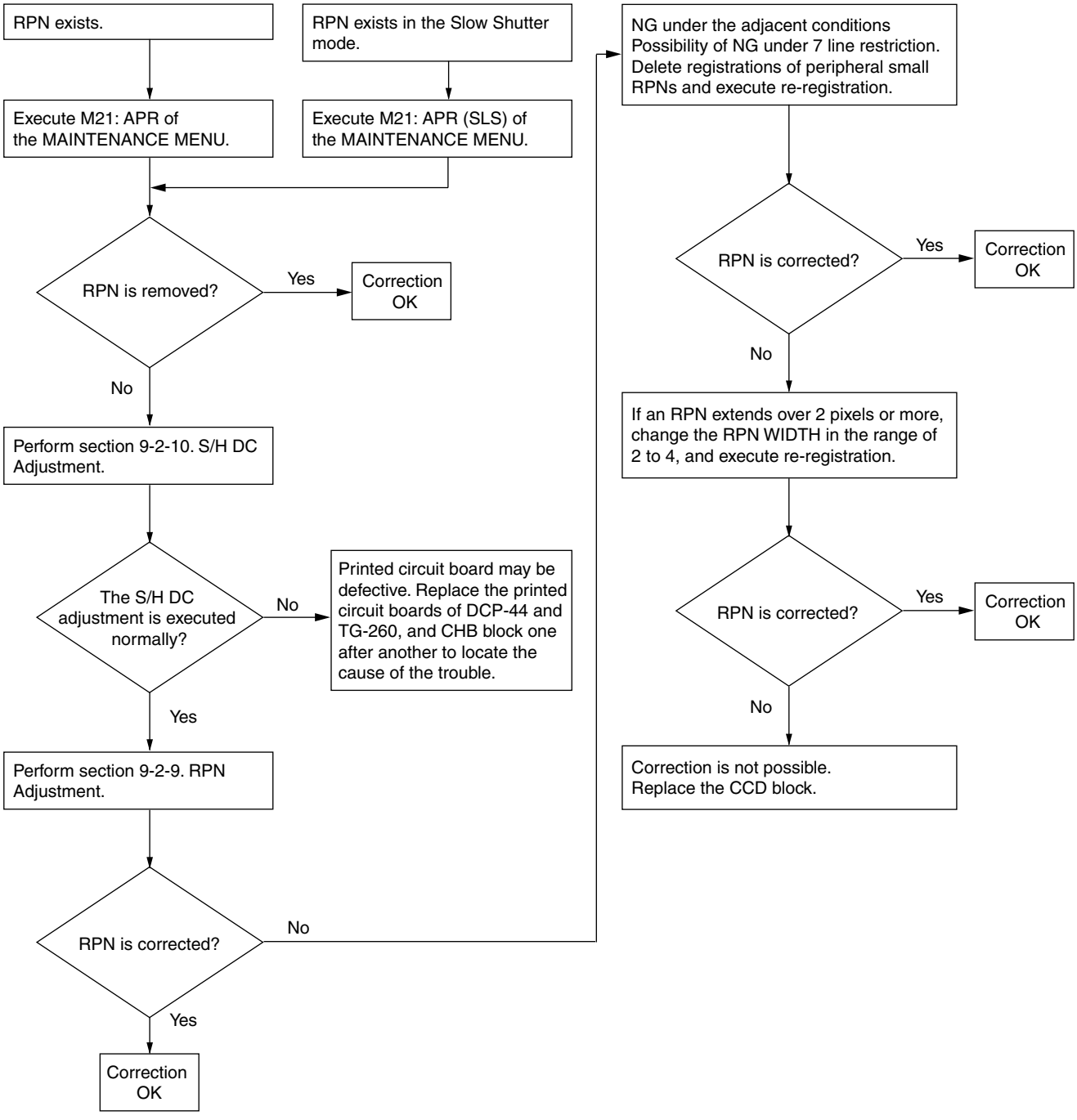
2. Perform the R-channel adjustment using the menu until the vertical stripes become least visible on the picture monitor.
   MENU : SERVICE
   PAGE : S23 S/H DC
   ITEM : S/H DC B Rch (1)
3. On the menu, adjust as follows.
   MENU : SERVICE
   PAGE : S23 S/H DC
   ITEM : TEST OUT SELECT → G
4. Perform the G-channel adjustment using the menu until the vertical stripes become least visible on the picture monitor.
   MENU : SERVICE
   PAGE : S23 S/H DC
   ITEM : S/H DC B Gch (1)
5. On the menu, adjust as follows.
   MENU : SERVICE
   PAGE : S23 S/H DC
   ITEM : TEST OUT SELECT → B
6. Perform the B-channel adjustment using the menu until the vertical stripes become least visible on the picture monitor.
   MENU : SERVICE
   PAGE : S23 S/H DC
   ITEM : S/H DC B Bch (1)

Setting after Adjustment:

- On the menu, set as follows.
  MENU : SERVICE
  PAGE : S23 S/H DC
  ITEM : S/H DC ADJ MODE → OFF
  ITEM : TEST OUT SELECT → VBS

9-2-11. RPN Correction Procedure

The RPN correction procedure is shown below.


RPN exists.
RPN exists in the Slow Shutter mode.
Execute M21: APR of the MAINTENANCE MENU.
Execute M21: APR (SLS) of the MAINTENANCE MENU.
RPN is removed?
Yes
Correction OK
No
Perform section 9-2-10. S/H DC Adjustment.
The S/H DC adjustment is executed normally?
No
Printed circuit board may be defective. Replace the printed circuit boards of DCP-44 and TG-260, and CHB block one after another to locate the cause of the trouble.
Yes
Perform section 9-2-9. RPN Adjustment.
RPN is corrected?
No
Yes
Correction OK
NG under the adjacent conditions Possibility of NG under 7 line restriction. Delete registrations of peripheral small RPNs and execute re-registration.
RPN is corrected?
Yes
Correction OK
No
If an RPN extends over 2 pixels or more, change the RPN WIDTH in the range of 2 to 4, and execute re-registration.
RPN is corrected?
Yes
Correction OK
No
Correction is not possible. Replace the CCD block.

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